

UNIVERSITY MICROFILMS  
313 FIRST ST  
ANN ARBOR MICH

October 18-20, French Lick, Ind.

THE JOURNAL OF  
**MEDICAL  
EDUCATION**

**JUNE 1954 • Vol. 29, No. 6**

**Table of Contents on Page 2**



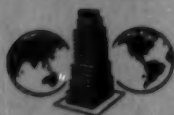
OFFICIAL PUBLICATION OF THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES

**New (16th) Edition!**

**Burrows-Textbook of Microbiology**

See SAUNDERS ADVERTISEMENT—just inside

McGraw-Hill MEDICAL BOOKS



*Soon to be published*

## PRINCIPLES OF BIOCHEMISTRY

By ABRAHAM WHITE, Ph.D., Professor and Chairman of the Department of Biochemistry, and Associate Director of the Albert Einstein College of Medicine, Yeshiva University; PHILIP HANDLER, Ph.D., Professor and Chairman of the Department of Biochemistry and Nutrition, Duke University School of Medicine; EMIL L. SMITH, Ph.D., Professor of Biological Chemistry and Research Professor of Medicine, University of Utah College of Medicine; and DEWITT STETTIN, Jr., M.D., Ph.D., Chief of the Division of Nutrition and Physiology, and Member of the Public Health Research Institute of the City of New York, Inc. 900 pages, 6 x 9, illustrated. Probable price: \$14.00

—Emphasizing the application of biochemistry in medical practice, this new book is a critical exposition of the fundamental principles of the science. Primary consideration is given to the significance of biochemistry in the normal functioning of biological systems, particularly in relation to man. Pathological conditions are described only where biochemistry has made a contribution to the understanding of a given disease or where the study of aberrant metabolism has shed light on normal biological mechanisms.

—The science has been approached from a synthesizing point of view; for example, the chemistry of digestion is integrated with the metabolism of the major foodstuffs. Stress is given to such dynamic aspects as catalysis, metabolism, and biological oxidation. Electrolyte, fluid, and acid base relations, renal function, secretions, and parenteral fluid therapy are presented in detail with reference to their importance for medicine. A definitive treatment is given such subjects as the biochemistry of specialized tissues, metabolic inter-relationships, and the relationship of evolution, genetics, and metabolism.

—As the four authors, each a scientific investigator and teacher, worked as a team, their material has been subjected to a fourfold critical appraisal. Thus, this book represents the coordinated opinion and accumulated knowledge of four scientists, written and unified in a single presentation.

**Send in advance for your on-approval copy**

**McGraw-Hill Book Company, Inc.**

HEALTH EDUCATION DEPARTMENT

330 West 42nd Street

New York 36, N. Y.

MCGRAW-HILL MEDICAL BOOKS



### ***New (16th) Edition!***

### **Burrows—Textbook of Microbiology**

In this *New (16th) Edition* of a long-famous textbook, the student receives a complete coverage of the entire field of microbiology—thoroughly integrated and logically arranged. *Clinical applications* have been emphasized, and the book has been revised with this view in mind. Latest developments in the field have been incorporated: staphylococcal toxins; antibiotics (including formulae of aureomycin and terramycin); pathogenesis of pertussis; etc.

By WILLIAM BURROWS, Ph.D., Professor of Bacteriology, Department of Bacteriology and Parasitology, University of Chicago. About 814 pages, 6 $\frac{3}{4}$ " x 10", 266 illustrations.

*New (16th) Edition—Ready in August.*

### ***New (6th) Edition!***

### **Arey—Developmental Anatomy**

This textbook, now in its *New (6th) Edition*, will prove important in meeting the requirements of the medical student. A new feature is an explanation of the *causal development* of each organ or group of organs. Another noteworthy feature in this edition is the material on the *72-hour chick*. Part III of the text includes a very *practical laboratory manual*.

By LESLIE BRAINERD AREY, Ph.D., Sc.D., LL.D., Robert Laughlin Rea Professor of Anatomy, Northwestern University. About 640 pages, 6 $\frac{3}{4}$ " x 9 $\frac{3}{4}$ ", 390 illustrations, some in color.

*New (6th) Edition—Ready in August.*

### ***New!***

### **Cantarow & Schepartz—Biochemistry**

This is a textbook of biochemistry written specifically for first year students of medicine. The authors have minimized the strictly chemical approaches and have stressed the dynamic aspects in about 75% of the text. Each subject is handled as an entity and very little material can be skipped. The index is exceptionally detailed and is designed to save the student's time.

By ABRAHAM CANTAROW, M.D., Professor of Biochemistry; and BERNARD SCHEPARTZ, Ph.D., Assistant Professor of Biochemistry, Jefferson Medical College. 780 pages, 6" x 9", 136 illustrations.

*New. Just Ready!*

### **W. B. SAUNDERS COMPANY**

*West Washington Square*

*Philadelphia 5*

# Table of Contents

Vol. 29

June 1954

No. 6

## ARTICLES

A Department of Internal Medicine —William Bennett Bean.....	11
Validity and Reliability of the New Objective Tests —John T. Cowles, John P. Hubbard.....	30
The Financing of Medical Schools —Brian Bird.....	35
Group Instruction in the Art and Techniques of Lecturing —Julius H. Comroe Jr.....	39

## EDITORIALS AND COMMENTS

Our Obligation to World Medicine.....	42
The Supply of Basic Science Teachers.....	43

## NEWS DIGEST

College Briefs .....	48
----------------------	----

## AUDIOVISUAL NEWS

BOOK REVIEWS.....	62
-------------------	----

## ABSTRACTS AND EXCERPTS

THE PERSONNEL EXCHANGE.....	69
-----------------------------	----

Association Officers, Staff, Committees.....	4
--	---

Index to Advertisers.....	8
---------------------------	---

Calendar of Meetings.....	8
---------------------------	---

## The Journal of MEDICAL EDUCATION



Official publication of the Association of American Medical Colleges, 185 N. Wabash Ave., Chicago 1.

The Journal of MEDICAL EDUCATION is owned and published monthly by the Association of American Medical Colleges, 185 N. Wabash Ave., Chicago 1; Phone, State 2-8870. Entered as second class matter January 17, 1930, at the Post Office, Chicago, Ill., under the Act of March 3, 1879.

**EDITORIAL BOARD:** John Z. Bowers, chairman, Utah; William B. Bean, Iowa; Stanley E. Bradley, Columbia; Alan Chesney, Johns Hopkins; James W. Faulkner, Boston; Russell L. Holman, Louisiana State; Chauncey D. Leake, Texas; Dean F. Smiley, secretary.

**STAFF:** Editor, Dean F. Smiley; Assistant Editor, Tess Snyder; Editorial Assistant, Barbara Madden.

**EDITORIAL POLICY:** Articles ordinarily will be limited to 5,000 words in length. Articles longer than this usually will require treatment as a supplement and necessitate a publication subsidy. Responsibility for signed articles and editorials is not assumed by the Association's officers or the Journal's Editorial Board but by the individual author.

**SUBSCRIPTION RATES:** \$7 per year; \$1 per single copy; foreign \$8 per year; \$1.25 per single copy.

**COPY DEADLINE:** Copy for typesetting must be in by the 1st and plates by the 10th of the month preceding publication.

**ADVERTISING:** Advertising Manager, Roy G. Parry, Journal of Medical Education, 185 N. Wabash Ave., Chicago 1, Ill.; State 2-8870.

**REPRINTS:** Each author routinely receives 25 copies of his article promptly after publication. Additional reprints may be purchased from the Journal in quantities of 100, and in multiples of hundreds at a price depending on the length of the article.

**Copyright:** June 1954, by the Association of American Medical Colleges.

Printed in U.S.A.



NEW SECOND EDITION  
A JUNE 1954 PUBLICATION  
REWRITTEN TO GIVE LATEST TECHNIQS  
WITH MORE THAN 650 SUPERB ILLUSTRATIONS

# LEGAL MEDICINE, PATHOLOGY AND TOXICOLOGY

BY

**THOMAS A. GONZALES, M.D.**, Chief Medical Examiner, City of New York; Professor of Forensic Medicine, N. Y. University College of Medicine; Lecturer on Criminological Medicine, N. Y. Police Academy.

**MORGAN VANCE, M.D.**, Deputy Chief Medical Examiner, City of New York; Assoc. Professor of Forensic Medicine, N. Y. University College of Medicine; Lecturer in Forensic Medicine, College of Physicians and Surgeons, Columbia University; Lecturer on Criminological Medicine, N. Y. Police Academy.

**MILTON HELPERN, M.D.**, Deputy Chief Medical Examiner, City of New York; Assoc. Professor of Forensic Medicine, N. Y. University College of Medicine; Lecturer in Legal Medicine, Cornell University College of Medicine; Lecturer on Criminological Medicine, N. Y. Police Academy.

**CHARLES J. UMBERGER, Ph.D.**, Toxicologist, Laboratory of the Chief Medical Examiner, City of New York; Lecturer in Toxicology, Dept. of Forensic Medicine, N. Y. University Postgraduate Medical School.

WITH INTRODUCTION BY

**HARRISON S. MARTLAND, M.D.**, Chief Medical Examiner, Retired, Essex County (Newark), New Jersey; Professor of Forensic Medicine, N. Y. University College of Medicine.

This authoritative and profusely illustrated text covers all aspects of the application of medical and pathological knowledge to questions of law involved in the investigation of deaths due to accidental or planned violence or poisoning, deaths due to natural but unknown causes, or deaths which occur under legally suspicious circumstances. The technical methods and procedures described are those in use by the personnel of the Medical Examiner's office in the City of New York and reflect the cumulative experience gained in the handling of more than 16,000 such cases yearly by that office. Also included are practical discussions of such subjects as investigation at the scene of death; the technic of autopsy; examination of semen, blood, hair and other materials; the legal relationship between the physician and the government; rights and obligations of physicians; malpractice; insurance and survivorship. The concluding section on analytic toxicology is a complete working manual.

2nd EDITION • JUNE 1954 • 1370 PAGES • 658 ILLUSTRATIONS • \$18.00

**APPLETON - CENTURY - CROFTS, INC.**

(Publishers of THE NEW CENTURY CYCLOPEDIA OF NAMES)

35 WEST 32nd STREET, NEW YORK 1, N. Y.

# Association of American Medical Colleges

## OFFICERS OF THE ASSOCIATION 1953-1954

### Officers and Members of Executive Council

*President:* STANLEY E. DORF.....Cincinnati  
*President-Elect:* VERNON W. LIPPARD.....Yale  
*Vice President:* WILLIAM S. MIDDLETON.....Wisconsin  
*Treasurer:* JOHN B. YOUMANS.....Vanderbilt  
*Immediate Past President:* WARD DARLEY.....Colorado  
*Joseph C. Hinsey, Chairman*  
 .....N. Y. Hospital-Cornell U. Med. Center  
 Robert A. Moore.....Washington U. (St. Louis)  
 Stockton Kimball.....Buffalo  
 John Z. Bowers.....Utah  
 George N. Aagaard.....Southwestern  
 Walter R. Berryhill.....North Carolina  
*Secretary:* Dean F. Smiley.....AAMC  
*Director of Studies:* John M. Stalnaker.....AAMC

### Staff

DEAN F. SMILEY, Secretary; Editor, Medical Education  
 JOHN M. STALNAKER, Director of Studies  
 J. EDWIN FOSTER, Director, Medical Audio-Visual Institute

### Committees of the Association 1953-1954

(Chairman listed first—Affiliation listed in italics)

#### AUDIOVISUAL EDUCATION

Walter A. Bloedorn, George Washington  
 Thomas P. Almy, Cornell  
 Clarence de la Chapelle, N. Y. U. Post-Grad.  
 William W. Frye, Louisiana  
 Theodore R. Van Dellen, Northwestern  
 W. Clarke Wescoe, Kansas

#### BORDEN AWARD

Ashley Weech, Cincinnati  
 Willard M. Allen, Washington Univ.  
 Harry P. Smith, Columbia  
 Elmer H. Stotz, Rochester  
 William S. Tillett, N. Y. University

#### CONTINUATION EDUCATION

James E. McCormack, Columbia  
 George N. Aagaard, Southwestern  
 Robert Boggs, N. Y. Univ. Post-Grad.  
 Robert Howard, Minnesota  
 Samuel Proger, Tufts  
 Frank Roberts, Tennessee  
 John B. Truslow, Medical Col. of Va.

#### EDITORIAL BOARD

John Z. Bowers, Utah  
 William B. Bean, Iowa  
 Stanley E. Bradley, Columbia  
 Alan Cheaney, Johns Hopkins  
 James W. Faulkner, Boston  
 Russell L. Holman, Louisiana State  
 Chauncey D. Leake, Texas  
 Dean F. Smiley, Secretary

#### FINANCING MEDICAL EDUCATION

John B. Youmans, Vanderbilt  
 Walter A. Bloedorn, George Washington  
 Ward Darley, Colorado  
 Joseph C. Hinsey, N. Y. Hosp., Cornell  
 Vernon W. Lippard, Yale  
 Norman Topping, Pennsylvania

## GRADUATE MEDICAL EDUCATION

Kendall Corbin, Mayo Foundation  
 Clarence de la Chapelle, N.Y.U. Post-Grad.  
 John Deitrick, Jefferson  
 Alma C. McGuinness, Penn. Graduate  
 R. L. Pullen, Missouri  
 C. J. Smyth, Colorado

## INTERNATIONAL RELATIONS IN MEDICAL EDUCATION

Francis Scott Smyth, California (S.F.)  
 E. Grey Dimond, Kansas  
 Frode Jensen, N. Y. Univ. Post-Grad.  
 Maxwell E. Lapham, Tulane  
 John McK. Mitchell, Pennsylvania  
 Elizabeth T. Lam, Consultant, Com. on  
 Internat. Exch. of Persons  
 Harold H. Loucks, Consultant, China  
 Medical Board  
 Myron Wegman, Consultant, Pan-American  
 Sanitary Bureau

## INTERNSHIPS AND RESIDENCIES

Currier McEwen, New York University  
 D. W. E. Baird (Idaho, Mont., Ore., Wash.), Oregon  
 Robert Berson (Ky., N.C., S.C., Tenn.), Vanderbilt  
 Harold Jeghers (Del., D.C., Md., Va., W.Va.), Georgetown  
 Warren T. Brown (Okla., Texas), Baylor  
 Charles A. Doan (E. Ohio, W. Pa.), Ohio State  
 Gordon E. Goodhart (Ariz., Calif., Nev.), Southern Calif.  
 James E. McCormack (Conn., N.Y., part of N.J.), Columbia  
 John McK. Mitchell (Part of N.J., E. Pa.), Pennsylvania  
 Otto Mortensen (Minn., Wis.), Wisconsin  
 F. J. Mullin (Ill., Ind., Iowa), Chicago Medical  
 Hayden C. Nicholson (Ark., La., Miss.), Arkansas  
 James P. Tollman (Kan., Mo., Neb., N.D., S.D.), Nebraska  
 Richard W. Witter (Mich., W. Ohio), Cincinnati  
 Emil G. Holstrom (Colo., N.M., Utah, Wyo.), Utah  
 George A. Wolf Jr. (Maine, Mass., N.H., R.I., Vt.), Vermont  
 Eugene B. Ferris Jr. (Ala., Fla., Ga.), Emory

## LICENSURE PROBLEMS

Charles A. Doan, Ohio State  
 John P. Hubbard, Pennsylvania  
 J. Murray Kinsman, Louisville  
 Frank E. Whitacre, Vanderbilt  
 William R. Willard, State Univ. of N. Y. (Syracuse)  
 Albert W. Wright, Albany

## MEDICAL CARE PLANS

Dean A. Clark, Harvard  
 Frank R. Bradley, Washington U. (St. Louis)  
 George Hayman, Tufts  
 Henry D. Mulholland, Virginia  
 John F. Sheehan, Loyola  
 Albert Snoke, Yale  
 Maxwell M. Wintrobe, Utah

## PLANNING FOR NATIONAL EMERGENCY

Stanley Olson, Baylor

(Committees continued on page 6)

"Symptoms, including fever,

largely cleared up

within 24 to

48 hours."



English, A. R., et al.:  
Antibiotics Annual (1953-1954),  
New York, Medical  
Encyclopedia, Inc., 1953, p. 70.

afebrile in hours c

# AIH Tetracyn

Brand of tetracycline hydrochloride

a new  
broad-spectrum  
antibiotic  
of unexcelled  
tolerance

Simple, dramatic proof of the effectiveness of Tetracyn is offered by the characteristic rapid defervescence noted in the treatment of a wide range of susceptible infectious diseases. *Think of Tetracyn* whenever you take a temperature for an AIH response in Tetracyn-sensitive infections.

**Supplied:** TETRACYN TABLETS (sugar coated)  
250 mg., 100 mg. and 50 mg.

TETRACYN ORAL SUSPENSION (amphoteric)  
(chocolate flavored) Bottles of 1.5 Gm.

TETRACYN INTRAVENOUS  
Vials of 250 mg. and 500 mg.

TETRACYN OINTMENT (topical)  
30 mg./gram ointment  
½ oz. and 1 oz. tubes



BASIC PHARMACEUTICALS FOR NEEDS BASIC TO MEDICINE

536 Lake Shore Drive, Chicago 11, Illinois

(Committees continued from page 4)

Mark Everett, Oklahoma  
Thomas Forbes, Yale  
Stockton Kimball, Buffalo

#### PROGRAM

Stanley E. Dorst, Cincinnati  
Vernon W. Lippard, Yale  
William Middleton, Wisconsin  
Dean F. Smiley, secretary

#### PUBLIC INFORMATION

John L. Caughey, Western Reserve  
Walter R. Berryhill, North Carolina  
Joseph B. Kelly, Johns Hopkins  
Milton Murray, Medical Evangelists  
Ralph Rohweder, Natl. Soc. for Med. Research  
Raymond O. Torr, Natl. Fund for Med. Education  
John D. Van Nuys, Indiana  
Harold C. Wiggers, Albany

#### TEACHING INSTITUTES AND SPECIAL STUDIES

George Packer Berry, Harvard  
Philip Bard, Johns Hopkins  
D. Bailey Calvin, Texas  
Stanley E. Dorst, *Ex Officio*  
Joseph C. Hinsey, *Ex Officio*  
Thomas Hunter, Virginia  
Carlyle Jacobsen, State Univ. of N. Y.  
Vernon W. Lippard, *Ex Officio*  
Rolf Syvertsen, Dartmouth  
W. Clarke Wescoe, Kansas  
John M. Stalnaker, secretary

#### VETERANS ADMINISTRATION—MEDICAL SCHOOL RELATIONSHIPS

R. Hugh Wood, Emory  
Harold S. Diehl, Minnesota  
A. C. Furstenberg, Michigan  
Currier McEwen, New York University  
Gordon H. Scott, Wayne  
Richard W. Vilter, Cincinnati

#### Representatives to Related Organizations

##### ADVISORY BOARD FOR MEDICAL SPECIALTIES

Stanley E. Dorst, Cincinnati  
William S. Middleton, Wisconsin

##### ADVISORY BOARD OF AMERICAN FOUNDATION OF OCCUPATIONAL HEALTH

Gordon H. Scott, Wayne

##### ADVISORY COUNCIL FOR THE NATIONAL FUND FOR MEDICAL EDUCATION

Walter A. Bloedorn, George Washington  
Joseph C. Hinsey, N. Y. Hosp., Cornell  
John B. Youmans, Vanderbilt

##### ADVISORY COUNCIL ON MEDICAL EDUCATION

Stanley E. Dorst, Cincinnati  
Joseph C. Hinsey, N. Y. Hosp., Cornell  
Vernon W. Lippard, Yale

##### AMERICAN COUNCIL ON EDUCATION

Ward Darley, Colorado  
Joseph L. Johnson, Howard  
Rev. Paul A. McNally, Georgetown  
Edward J. Van Liere, West Virginia

William R. Willard State U. of N. Y.  
(Syracuse)

H. Boyd Wylie, Maryland

#### COMMITTEE ON EVALUATION OF FOREIGN CREDENTIALS

Francis Scott Smyth, California (S.F.)  
Harold A. Davenport, Northwestern

#### COUNCIL ON NATIONAL EMERGENCY SERVICE

Stanley W. Olson, Baylor

#### FEDERATION OF STATE MEDICAL BOARDS

Charles A. Doan, Ohio State

#### FELLOWSHIPS SELECTION BOARD (WHO)

Walter A. Bloedorn, George Washington

#### NATIONAL INTERN MATCHING PLAN, INC.

F. J. Mullin, Chicago Medical  
Currier McEwen, New York U.  
John M. Stalnaker, AAMC

#### JOINT COMMITTEE ON MEDICAL EDUCATION IN TIME OF NATIONAL EMERGENCY

Stockton Kimball, Buffalo  
Joseph C. Hinsey, N. Y. Hosp., Cornell  
Stanley W. Olson, Baylor  
Dean F. Smiley, AAMC  
John M. Stalnaker, AAMC

#### LIAISON COMMITTEE WITH COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

Stanley E. Dorst, Cincinnati  
Joseph C. Hinsey, N. Y. Hosp., Cornell  
Vernon W. Lippard, Yale  
Dean F. Smiley, AAMC  
John M. Stalnaker, AAMC

#### MEDICAL ADVISORY COMMITTEE ON INSTITUTE OF INTERNATIONAL EDUCATION

Duncan W. Clark, State Univ. of N. Y.  
(Brooklyn)  
Dayton J. Edwards, Cornell  
Aura Severinghaus, Columbia  
Cornelius T. Stepita, N. Y. Univ. Post-Grad.

#### NATIONAL BOARD OF MEDICAL EXAMINERS

John Deitrick, Jefferson  
Robert A. Moore, Washington U. (St. Louis)  
B. O. Raulston, Southern California

#### NATIONAL HEALTH COUNCIL

Jean A. Curran, State Univ. of N. Y.  
(Brooklyn)  
Joseph C. Hinsey, N. Y. Hosp., Cornell  
Ira Hiscock, Yale

#### SUBCOMMITTEE ON MEDICAL EDUCATION FOR NATIONAL DEFENSE

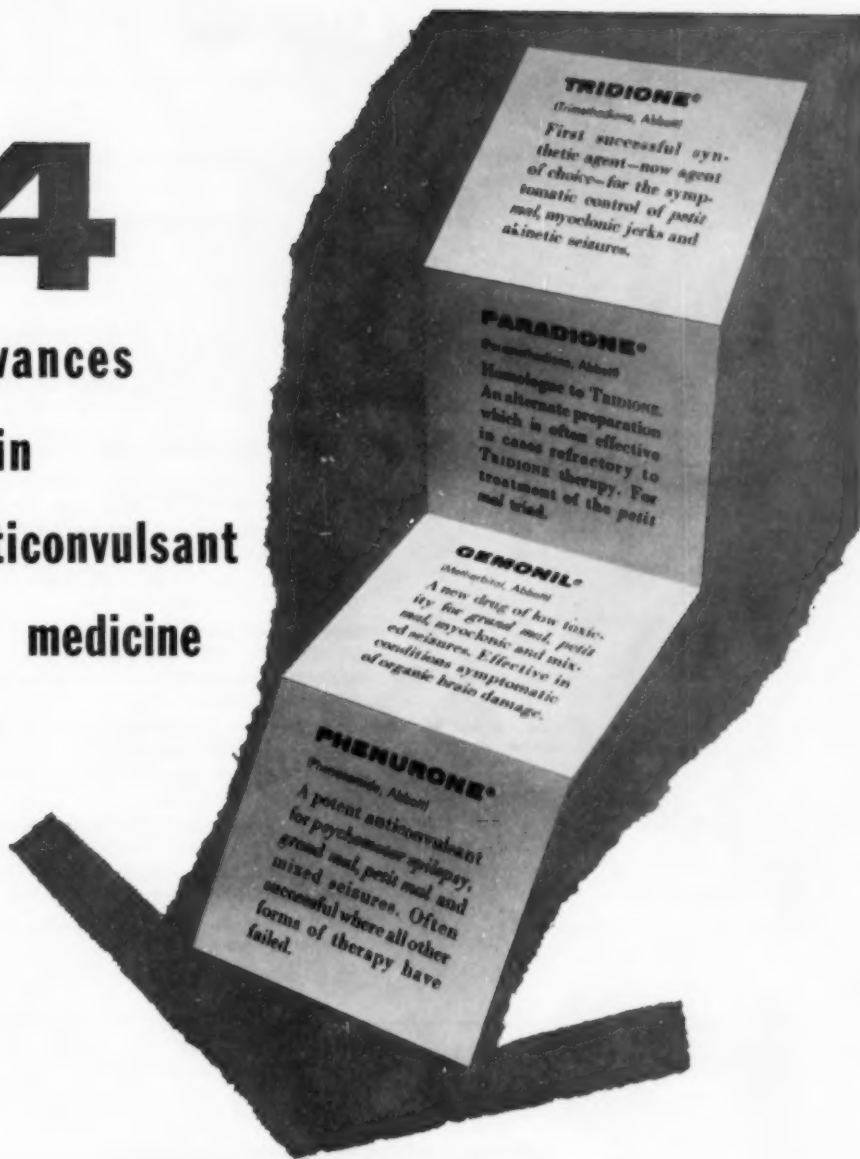
Stanley W. Olson, Baylor  
George V. Byfield, Illinois  
Lawrence Hanlon, Cornell  
Stockton Kimball, Buffalo  
John Lagen, California (S.F.)  
John B. Youmans, Vanderbilt

# 4

## advances

### in

## anticonvulsant medicine



#### **TRIDIONE®**

(Trimethadione, Abbott)

First successful synthetic agent—now agent of choice—for the symptomatic control of petit mal, myoclonic jerks and akinetic seizures.

#### **PARADIONE®**

(Paraldehyde, Abbott)

Homologue to TRIDIONE. An alternate preparation which is often effective in cases refractory to TRIDIONE therapy. For treatment of the petit mal triad.

#### **GEMONIL®**

(Metacarbital, Abbott)

A new drug of low toxicity for grand mal, petit mal, myoclonic and mixed seizures. Effective in conditions symptomatic of organic brain damage.

#### **PHENURONE®**

(Phenacetamide, Abbott)

A potent anticonvulsant for psychomotor epilepsy, grand mal, petit mal and mixed seizures. Often successful where all other forms of therapy have failed.

**H**ERE are four modern anticonvulsants—each a dramatic advance in antiepileptic medicine. You'll find that each of these drugs has specific uses, advantages in the various seizure forms. When you use them, you will add inestimably to the scope

and progress of your treatment. You will fit the drug to the seizure . . . individualize your anticonvulsant therapy. Write today for professional literature on any or all of these drugs. Abbott Laboratories, North Chicago, Illinois. **Abbott**

409127A

# Calendar of Meetings

**ASSOCIATION OF AMERICAN MEDICAL COLLEGES 65th Annual Meeting, October 18-20; French Lick, Ind. (French Lick Springs Hotel).**

**Teaching Institute on Pathology, Microbiology, Immunology and Genetics—October 10-15; French Lick, Ind. (French Lick Springs Hotel). (Attendance By Invitation Only.)**

**Academy of Psychosomatic Medicine—Oct. 8-9; Plaza Hotel; New York City.**

**American College Public Relations Association, Medical Schools Section—June 21-23; Hotel Roosevelt; New York.**

**American Diabetes Association—June 19-20; San Francisco.**

**American Geriatrics Society—June 17-19; Fairmont Hotel; San Francisco.**

**American Hospital Association—September 20-23; Palmer House; Chicago.**

**American Medical Association—June 21-25; San Francisco.**

**American Neurological Association—June 14-16; Hotel Claridge; Atlantic City.**

**American Proctologic Association—June 2-5; Hotel Statler; Los Angeles.**

**Conference of International Union Against Tuberculosis—September 26-October 2; Madrid, Spain.**

**Inter-American Congress of Radiology—April 24-29, 1955; Shoreham Hotel, Washington, D. C.**

**International Anesthesia Research Society—Oct. 10-14; Los Angeles.**

**International Cancer Congress—July 23-29; Sao Paulo, Brazil.**

**International Conference on Thrombosis and Embolism—July 20-24; Basle, Switzerland.**

**International Congress of Clinical Pathology—September 6-10; Washington, D. C.**

**International Congress on Diseases of the Chest—October 4-8; Barcelona, Spain.**

**International Congress on Gynecology and Obstetrics—July 26-31; Geneva, Switzerland.**

**International Congress of Hematology—Sept. 6-11; Paris.**

**International Congress on Mental Health—August 14-21; Toronto, Ont., Canada.**

**International Congress of Ophthalmology—September 10-11; Montreal, Canada.**

**International Congress of Psychology—June 7-12; Montreal, Canada.**

**International Poliomyelitis Congress—September 6-10; Rome, Italy.**

**Medical Library Association—June 15-18; Statler Hotel, Washington, D. C.**

**Medical Surgical Conference—June 14-15; Great Falls, Montana.**

**Society for Investigative Dermatology—June 19-20; Clift Hotel; San Francisco.**

**World Congress of Cardiology—September 12-17; Washington, D. C., and Bethesda, Md.**

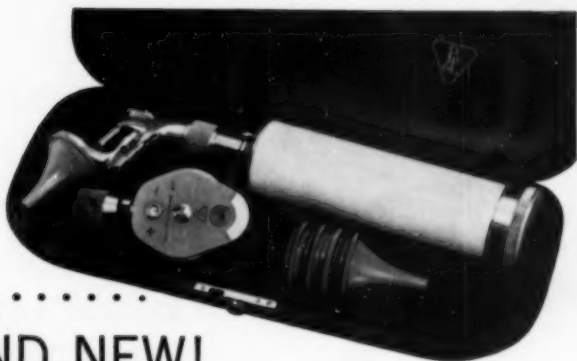
**World Medical Association—September 26-October 2; Rome.**

## Index to Advertisers

Abbott Laboratories .....	7
Appleton-Century-Crofts, Inc. ....	3
Association of American Medical Colleges .....	Third Cover
Bausch & Lomb Optical Co. ....	9
Blakiston Company, Inc. ....	66
Borcherdt Malt Extract Company .....	58
J. B. Lippincott Company .....	Fourth Cover

McGraw-Hill Book Company .....	Second Cover
J. B. Roerig Company, Inc. ....	5
W. B. Saunders Company .....	Front Cover, I
Smith, Kline and French Laboratories .....	60, 61
Taylor Instrument Company .....	54
Warner-Chilcott Laboratories .....	70
Woodward Medical Personnel Bureau .....	69
Wyeth, Inc. ....	10





**BRAND NEW!**

**DIAGNOSTIC INSTRUMENTS**

**by Bausch & Lomb**

Enjoy new high standards of accuracy and convenience with these completely redesigned Hand Diagnostic Instruments. They're beautifully balanced—with lightweight aluminum die cast heads—held securely in place with new positive-locking bayonet type handle connection. Lamp is pre-focused, insuring brilliant flicker-proof illumination for maximum seeing efficiency. Light intensity is easily controlled with natural thumb movement. Battery handle in rich ivory lifetime finish. Pocket-size case is lightweight, tough, easy to wipe clean.



**Available Soon**  
**"At Your Instrument Dealers."**



**BAUSCH & LOMB**

SINCE  1853



## RESULTS FAR SUPERIOR IN HAY FEVER

In more than 92% of 102 patients in one study, "... results obtained with PHENERGAN in symptomatic relief of pollen hay fever were far superior to those obtained with any other antihistaminic agent."<sup>1</sup> Side effects were negligible; single, individualized doses were effective for periods of from four to 24 hours.<sup>1</sup>

The allergic patient, exhausted by the sneezing, rhinitis and lacrimation of hay fever, can be restored to *comfortable* living with PHENERGAN.

I. Silbert, N. E.: Ann. Allergy 10:328-334  
(May-June) 1952

### Supplied:

Tablets—12.5 mg. per tablet; bottles of 100  
Syrup—6.25 mg. per teaspoonful (5 cc.);  
bottles of 1 pint

# Phenergan<sup>®</sup>

Hydrochloride

PROMETHAZINE HYDROCHLORIDE



PHILADELPHIA 2, PA.

## A Department of Internal Medicine

"My business is to attend the sick and to aid the studies of those who seek the knowledge of disease at the bedside of the patient."—Latham

WILLIAM BENNETT BEAN

THE MOST DISQUIETING function of the mind is to force itself out of the soothing security of the ruts of daily existence to try the broad perspective of a general view. That such toil is a duty of teachers is forgotten or shrugged off. Not since the memorable deathbed letter of Francis Peabody to Warfield Longcope, later published as "The Soul of the Clinic," has anyone made an effort to set forth the problems and philosophy of a department of internal medicine along comprehensive lines. The remarkable changes of the last 25 years pose new difficulties for us. To some of them, rather than any elaboration on Peabody's magnificent theme, my attention is aimed.

In an age of complexity and perplexity we are timid about coming to grips with basic principles of philosophy. This characterizes our time. There is a dearth of even simple maps and direction finders for the instruction and edification of those who hopefully undertake new academic positions in medicine. Specifically, there is currently no digest, compendium or *vade mecum* which sets forth

the principles and problems whose often erratic interactions are the daily bread of a department of internal medicine. Lacking such a guide, departments run their course influenced variously by tradition, strong or weak personalities, local circumstances, improvisation, habit or coasting along the downward slope of least resistance. I\* am presenting the notions expressed here with no illusion that they give final answers to searching questions. They may not even provide adequate guides. Rather, they are to give the uninitiated some idea of the types of problems, the concerns and the goals of members of a particular department. This may help junior associates and those in adjoining fields understand what kind of a race it is rather than how to win it. To them

---

\*Some people are made terribly uneasy by the first person singular, and one of the sorry results is that much medical writing is stiffly ambiguous, written in the passive voice and subjunctive mood. In this era of ghost writers I will say my piece so that the reader will know at least who is talking. The faults and errors are mine too. I am indebted beyond the possibility of thanks to members of the departmental and resident staffs for their critical help in reading the many drafts of this paper; but even more for their aid in continuing the hard process of my own education. A further debt to earlier teachers, colleagues, medical schools and hospitals is exorbitant, growing and can never be paid.

---

Dr. Bean is head of the department of internal medicine of the college of medicine and the University Hospitals, State University of Iowa.

## *A Department of Internal Medicine*

rather than to my colleagues, contemporary inmates of many an ivory tower, it is directed. Its clues might help a new department head avoid making the mistakes of his predecessors, a vital necessity if we are to go forward. At any rate I wish that I might have had some such outline to study earlier in my academic career when I opened the top door and blithely walked into what at times seems to have been an open elevator shaft. Nevertheless, like Alice's experiences in Wonderland, the entire business, however improbable, is full of strange fascinations.

The functions of a department of medicine may be divided into four general headings for discussion, though they are in fact so intertwined that separation is artificial. These functions are teaching and research, practice and administration. Their order of importance is approximately as listed, though some would put practice last.

The teaching of clinical medicine participates in the hazards of all teaching, which are accentuated within the frustrating, shifting complex of clinical arts, basic science and applied science. It includes the imparting of knowledge (mainly a teaching function), the acquisition of skill and aptitude (mainly a student responsibility), and the cultivation of philosophy which develops in the perceptive as a fruit of relationships in the patient-student-teacher triad. In this region of semi-organized confusion, peace and quiet might gain a foothold if there were firm agreement on the objectives of medical education. There is not, perhaps for the best. Lacking this, we might salvage something to sustain our waning pride if we had any method of measuring our competence as teachers by some crude titration of the results of

our efforts. Here, too, perhaps mercifully, there is uniform lack of agreement. Should we judge the physician 10 years after graduation by bank account, ephemeral acclaim of confreres, devotion of a flock of dependent and adoring patients, or by talent for anonymous benefaction in daily toil? Or by what combination of these or other criteria? This rambling preamble indicates that I am presenting very personal views.

### **Undergraduate Teaching**

We\* teach undergraduates, residents and staff. Some is formal, but a substantial part, and no doubt the most important part, is informal. Probably the best is the unconscious influence of example. A discussion of the teaching of undergraduates usually hovers like a mother hen over the scattering elements of the curriculum. Beyond accepting its inevitability, there is no consensus. This does not disturb me. If we agree on a few basic ideas, we will be forgiven if we leave the curriculum to those earnest furniture arrangers who believe that its externals greatly matter.

The vital needs for clinical undergraduate teaching are good students, informed and diligent teachers and the hospital-clinic with patients for supervised learning. It has never been demonstrated that any one of the several methods of pedagogy is radically better or worse than the others. In the nature of things a controlled study abstracts the problem from reality and thus precancels its hopeful modicum of utility. I must nonetheless express my admiration for

\*There are 12 with rank of assistant professor or higher, six instructors and three fellows on our staff. One associate professor, one assistant professor and six instructors on the veterans hospital staff have appointments in the department. There are no part-time attending men.

that eager and passionate band of Don Quixotes who have tilted so studiously at the curricular windmill that its circular progress is fairly stopped with all the lances and armor.

I am aware that, for any course in the four years of medical school, it would be well if everything else had come previously. We still follow the practice of teaching one thing at a time. Our point of view is the modern didactic heresy, now that the advance guard of teaching is trying the pot-pourri of a little of everything at once with curricular introspection and ambivalence whose uncertainties are illustrated by this verse:

*The centipede was happy quite  
Until a frog in fun  
Said, "Pray which leg comes after which?"  
This raised her mind to such a pitch  
She lay distracted in a ditch  
Considering how to run.*

We give some introductory discussions to the first-year students and lectures on cardiovascular dynamics in the course on physiology, and begin regular teaching in the second year with a course in the study of the patient. The methods of physical examination are presented; then drill in the examination of normal persons and finally the special procedures are learned. More than half the time is spent in groups of four, five or six students with a preceptor. Members of the departments of surgery and neurology cooperate in teaching the course. The explicit purpose of the course is to learn: (1) the physician's approach to the patient, (2) the technique of recognizing disease, (3) to interpret the signs in terms of anatomy, physiology, pharmacology, pathology and clinical medicine, and (4) to make such diagnoses as are possible by the exclusive use of physical examination.

In the third trimester we give the

course in laboratory diagnosis. Each year the program changes after we review new methods and discard old ones, though the attrition rate is not quite fast enough. Members of the departments of bacteriology, biochemistry, pathology and preventive medicine help give this course a broad and sound base. We emphasize laboratory practice after lecture-demonstration. Problems of laboratory diagnosis are taught as an extension of the physical examination, with stress on office and bedside procedures and integration with biochemistry and pharmacology.

Lectures in medicine in the second and third years are a didactic survey. Assignments for text and journal reading emphasize aspects not taken up in lectures. We make no pretense of full coverage but include examples of various types of disease, new knowledge not yet in textbooks and views we hold which differ from the orthodox. The subject matter is representative rather than comprehensive, in the hope that in this way the student will become fitted to educate himself. On alternate weeks we have a clinic with a patient to illustrate some special condition. At times distinguished visitors lead the discussion. The didactic lectures cover 60 hours, a fivefold reduction since World War II; and the time gained is devoted to the clerkship. The content of the lecture course is reviewed each year so it can be adjusted to the medical school curriculum.

The junior spends one-third of the year as clinical clerk on the medical wards. During the early weeks of the junior year, history taking is discussed with emphasis on practical demonstrations using tape recordings to illustrate good and bad points. The clerkship is the crux of our teaching. In theory we aim at achieving a relationship of one instructor, one stu-

dent and one patient. The ratio is actually one instructor to four or five students. The clerkship is not uninterrupted assignment since two mornings and one afternoon a week are still occupied by lectures. Even this compromise is a great advance in this school toward having the clerk assigned full-time to one department.

When each new group first comes to the wards the staff man in charge of junior teaching and I go over the important problems of dealing with sick people and the details of patient assignments, case work and presentation. Every week on each of the four wards we have three teaching rounds of two hours each. I take one on each ward.\* There is one additional with each of the two staff men in charge of one of the four wards. Ordinarily one or sometimes two patients are considered. For my rounds a patient and the problem illustrated are assigned several days before presentation so the students have time to go to the library and study the subject. Sometimes references are given, sometimes not. All students are held responsible. Any student may be called on to present any patient he has worked up.

We try to hold rounds in the following manner, though we do not have adequate small teaching rooms. The group meets in a room away from the patient and the clerk presents the problem—sometimes only the history, sometimes the salient features of the physical examination also. Then the group goes to the bedside; the preceptor takes his own history, examines the patient, and demonstrates important findings to the clerks. The group then retires to the classroom where general discussion, questions and comments follow. Data from the

laboratory may be used. Discussion may keep close to the assigned subject or range widely. Each clerk is interrogated often. Experience has shown that the junior student needs much supervised study before he can be expected to guard the patient's feelings in open discussion at the bedside. We avoid the unhappy spectacle of premortem bedside dissection of the patient, where he is his own unwilling, alarmed and confused witness. After class the preceptor usually dictates a note for the record, agreeing or disagreeing with current formulations. Each staff man has his own gradebook with a picture of each student on a page for written comments which are entered after rounds. Individual staff men vary this program according to their admirable talent for differing, but the general plan prevails.

As soon as a patient is admitted to the ward the student is notified and may begin his study. He is responsible for recording his detailed history, the results of the examination including the normal findings, and the usual studies of blood, urine and feces. Other records and charts are not available until his work-up is complete. His record is checked by a staff man, then corrected or done over. About 40-50 per cent of the patients studied are presented on one of the formal teaching rounds. The student is expected to present any case when the patient goes to a special clinic or conference. He is responsible at all times for knowing the status of the patient, the diagnostic and therapeutic program and the ultimate outcome—death, recovery, transfer, operation or follow-up.

In addition to the scheduled teaching rounds, the junior clerk attends the general clinical conference and the clinical pathologic conference, and

\*Dr. Willis M. Fowler is now alternating with me, a much appreciated boon.



the weekly departmental rounds sometimes called grand. The clinical and clinical pathologic conferences which occur on alternate Wednesdays during the school year are teaching exercises in which we participate eagerly. The clinical conference continues throughout the summer. This conference is attended by junior and senior students, interns, residents and members of all departments interested in general rather than specialty teaching. Many representatives from the basic sciences attend. The resident presents a patient illustrating a problem which defies departmental limits. Several people discuss it from different vantage points, with comments and questions from the audience. It is an arena for open discussion and debate where differences of opinion and philosophy are presented freely. The teaching is directed at resident level, though it is illuminating to students of medicine of whatever age. The clinical pathologic conference follows traditional lines except that not all cases are presented as "who-dun-its," and several speakers usually participate. These two exercises, attended by those whose time and interest permit, are the cream of the school's group teaching. They continue to do much to bring the several departments into a greater unity than prevails where a loose confederation of independent departmental empires exists uneasily under a flag of truce. It encourages unity in the school, which for the undergraduate should be the harbinger of unity in the profession in later life.

There are not enough staff members to have a tutorial system but each student has individual attention from at least three staff men who write an opinion of his performance. We may get additional reports from residents and interns. Senior clerks

are on the wards at the same time and there is much exchange of ideas with a tendency for the progressive training by a series of apprentice stages which provides valuable didactic give and take under supervision.

We have done much soul searching about examinations and are as far from a consensus as possible. Some of us would gladly dispense with examinations altogether and rate the student according to scrutiny of his daily performance. Others are fascinated with the problem of making suitable examinations. We retain multiple choice, brief case analysis and occasional essay types. Grading is another moot question. I stand for an absolute standard of reference, whereas others are equally convinced that herd performance and grading "on the curve" are good enough. The upshot is that we give examinations, grade them and pay much less attention to the numbers than we do to our collected written opinions and comments. Near the end of the clerkship period we discuss each student in detail and select a few for special observation. Marginal students get oral and written examinations to see whether they advance, make up work or fail. The poor student receives a disproportionately large part of our thought and effort. In spite of all efforts to make our grading internally consistent there is some variation from person to person on the staff.

A scientific study of medical teaching and objective measurements which do indeed measure methods and results are needed more than ever today. The excessive complexity, staggering costs and at present the fantastic difficulty—in fact the impossibility—of even the simplest valid controlled study have been overlooked by those who advocate such naive plans as dividing classes

## *A Department of Internal Medicine*

in half. Because a problem is staggering does not excuse us for neglecting it, but to oversimplify and bring the false security of unrecognized error masquerading as truth is fatal to progress.

Of the special topics for teaching, the majority are integral with the whole and scarcely stand out for separate comment. Some exercises are repeated weekly. Dr. Franklin R. Top, of the department of hygiene and preventive medicine, makes communicable disease rounds on the isolation wards with juniors once a week. A weekly conference devotes formal effort to appraising the part emotions may have in producing or aggravating disease, and diseases have in upsetting emotions. We are not particularly happy about calling it a psychosomatic conference, but we do. Once a year a lecture course in electrocardiology is given as an elective which the whole class takes routinely. Senior clerks are invited to the weekly session in this subject run by and for residents. The weekly hematology conference is held to discuss cases with special diagnostic or therapeutic problems.

The growing chest clinic emphasizes the problems of patients with pulmonary or cardiac lesions whose therapy is likely to be surgical, and the objective evaluation of results of operations. In a very active thyroid clinic one or more representatives of the departments of internal medicine, surgery, radiology, the radiation laboratory and often pediatrics have been using the traditional clinical methods of evaluating thyroid function and the newer chemical and radiation techniques. With the extensive follow-up surveys these clinics provide valuable teaching for staff, residents and undergraduates. The unified program eliminates de-

partmental lines and embodies a common ground for service, research and learning as an example of a high order of medical collaboration.

Senior teaching is not radically different from junior teaching, but the student has more responsibility. He does more of the diagnostic and therapeutic procedures. His clerkship on the wards lasts only one month but he has more patients assigned. Each week I have one two-hour ward teaching class with seniors. No assignments are made beforehand. Usually two patients are discussed and examined in the same manner as with junior students. Much of the ward teaching is done while the senior clerks go on daily rounds\* with the residents and staff. The senior attends the same clinics and conferences he did as a junior. In addition he has two weeks in the medical outpatient clinic.

The University Hospitals at Iowa City receive patients brought in by ambulance from all over the state. The outpatient clinics serve as a diagnostic screen for hospital admissions and for follow-up. There is little of the care of the chronically ill or those with mild or acute minor medical troubles. We have no medical dispensary in the usual sense. This is a handicap but we remedy it by increasing the concentrated case study of the clerkship. Since our aim is to inculcate an attitude and philosophy about people rather than about lesions this is not a serious deficit. We get real help in the preceptorship. Between the third and fourth year each student spends a month with a doctor in general practice. In connection with the medical clinic, special departmental sections dealing with

\*I use the term "housekeeping" but it has offended some of the staff and residents. This is the high spot of residency training, and perhaps all teaching.

allergy and diseases of the alimentary canal have important functions in senior clerk teaching. In the outpatient department the student makes the first examination and records it. The study is reviewed by a resident and by a staff man when possible. In the senior year members of the medical department give a few lectures on physical medicine. There is a period of two weeks' clerkship at the nearby state tuberculosis sanatorium. There are no medical lectures for senior students.

We have discussed and brooded over the newer audiovisual aids. We use a few really fine movies to emphasize points which they are able to put across better than we can with any other method. We are exploring the usefulness of the Cambridge educational cardioscope, which makes available simultaneously a going record of amplitude, frequency and sound of heart sounds and murmurs. We have no facilities for using television in teaching, though several of us have organized and made short teaching programs for telecasting. Perhaps my feeling that the nonmechanized parts of medicine are so important makes me apprehensive of the machine in teaching. I shudder to think of "Medicine 1984," when all the classes are movies, sound tracks or television; patients are never seen in the flesh, and teachers are all but eliminated in favor of canned material. Then the lazy student will have his friend set up his tape recorder in class while he sleeps at home; and at examination, in the apotheosis of feedback, play into the great calculating monster such a selection as will soothe its turbulent electrical pulses, calm its faintly flickering transistors and make it spew forth in composite judgment a fine number as a grade. The whole transaction of medical education and practice, dispensing

with the mind and the person, will have reached journey's end in total mechanization.

### Residency

Our program of postgraduate hospital training is the fruit of intense study and careful planning. It has occupied much time and thought individually and by the department. One reason is that the residency has been the source of recruiting candidates for a career in teaching and research. Another reason has been our observation that residency training too often has gone by default or has been tailored to suit the pattern suggested by outside agencies.

Our underlying plan is learning by doing in an advancing apprenticeship under supervision which decreases as the resident matures. Since this is intensely personal and variable we have retained flexibility in our system. Most of our residents begin after a year of rotating internship. The first two years are one unit spent in charge of the medical wards and in several related medical specialties. Adjustments and scheduling are varied according to individual and departmental needs. About half of the resident's time is spent in charge of one of the four medical wards and a small fraction of this is spent on the private patient service. During the ward service an intern is assigned along with the resident. His duties and responsibilities are the same. They usually work up alternate cases.

The rest of the two-year period is spent in one of the medical department divisions: communicable diseases, allergy, diabetes or outclinic; and in neurology, chronic lung diseases and psychiatry. At times we have had a resident work in the university's student health service. Ward

## *A Department of Internal Medicine*

rotation in the future will include the medical service at the adjacent veterans hospital. When the resident is assigned to another department he becomes in effect a temporary member of that department, involved in its teaching and service functions, and in some cases participating in research. Though this part of the training program is not under departmental control, it goes with enthusiastic cooperation. The residents are aware of its help in giving rounded training in fields germane to internal medicine.

The third year of the residency is divided among four services. One is the equivalent of the chief residency in some programs. It includes supervision of the medical wards, consultation with junior residents, morning report and conference with the department head, liaison with staff men, scheduling departmental rounds, conferences, resident rotation, call lists and such paper work and administration are reduced to a minimum. Another period is spent in charge of the outclinic, where patient's appointments, admissions, checking students, and assisting in endoscopic examinations in the division of gastroenterology constitute the major activities. Each resident may perform between 50 and 100 gastroscopic and about 100 sigmoidoscopic examinations. There is much telephoning and correspondence about patients with referring physicians. Another period is spent as the medical consultant for the entire hospital. Here the responsibility for independent judgment fosters maturity. Discussion with senior staff members is encouraged. Many patients are seen by a staff member with the resident.

The other period is spent in the heart station, where the theoretical principles of electrocardiology are

mastered and proficiency in interpretation of electrocardiograms is gained by review of about a thousand tracings under skilled supervision. The resident runs the weekly teaching and review session devoted to correlation of clinical, pathologic and electrocardiographic data. In cooperation with the department of radiology we give intensive training in cardiac fluoroscopy. There is opportunity for observing and participating in the clinical physiological work of the cardio-vascular laboratory, including cardiac catheterization. The resident studies patients intensively with many methods.

The residency is a stratified block system, not a pyramid or truncated pyramid with one survivor at the top. We are not unique in having been much beset in recent years by wars and rumors of wars. It has been our policy to appoint residents without regard to liability for military duty. As a consequence we have lost 13 residents, one killed in line of duty. Four have returned to complete their training and several others are still on active duty. This and other factors have produced morale problems which many of us did not see or were not aware of during our own training. The great majority of residents now are married, many have children and all have financial problems in no wise met by the present "salary." The term resident, meaning one living in a hospital, has become a misnomer.

There is increasing competition for good residents from military, veterans and other federal hospitals. Fortunately hospitals are realizing that they must pay larger salaries to get residents though the pay scale is still unrealistic. Then there is the vacuum of more residencies than there are residents. In the face of all the uncertainties of modern life,

many young doctors are putting present security ahead of future excellence. We must recognize the resident's serious economic problems, help him meet them, but not condone an inordinate love of security which not only demands a guarantee of an easy way in life but also expects it to be brought to him. This cannot fail to have a bad effect on the medical profession over the years.

There are activities specifically planned for teaching and training residents. Once a week I hold a meeting to review and discuss the clinical problems, treatment, cause of death and autopsy findings (if available) of all patients who die. Then with the group I see a patient with diagnostic or therapeutic difficulties, an occasion conducive to constant clinical humility. There is also opportunity to consider any problem of interest or concern to the residents. The residents select and present patients for the weekly medical rounds attended by staff, residents, clinical clerks and visitors.

Each resident has several formal conferences and many informal ones with members of the senior staff about progress and plans for a career. There is emphasis on teaching as well as training. Interest in clinical investigation is fostered, and while still residents some have completed and published the results of their independent research. All are encouraged to participate in investigation, perhaps as members of a team, whether they have any interest in an academic career or not. We have a seminar each week during the year, at which the discussion is led or a paper presented by a resident and by a staff physician on alternate weeks. Papers to be given at outside meetings are rehearsed and criticized freely and rewritten.

Since the entire staff is full-time,

there is a very close relationship between residents and staff members who are always on hand. Growth and independence are encouraged, but enough supervision is available to see that the maturity is commensurate with the responsibility entrusted to the resident. At all stages the chance to teach colleagues is reflected up and down the line. It serves as a most challenging stimulus to learning and helps develop a sound esprit de corps. We have found that teaching of and by the residents is an increasingly important part of our total effort. A corollary is that the resident is or becomes a good teacher.

The department rather than the hospital pays for liability insurance for its residents, assuming true rather than theoretical responsibility. Funds from the consultation practice support this program. In addition we send residents in their second and third years to a meeting such as that of the Central Society for Clinical Research, the American Society for Clinical Investigation or the American College of Physicians. Any resident giving a paper at a meeting is sent at department expense. These journeys have been useful incentives to learning and research.

The presence of the veterans hospital has been a mixture of real assets and problems. This is not the place for detailed analytic study of the interrelations between our medical school-hospital complex and the VA hospital. The crux of the matter is to what extent the college of medicine should depend on the VA hospital for clinical teaching and what are the responsibilities of a dean's committee school to the VA hospital? A fear has been expressed that a sudden deflection of central policy might leave us high and dry. On the other hand, strong reservations on our part hinder



## *A Department of Internal Medicine*

the growth of rapprochement which must exist for true cooperative teaching effort.

The first staff of the Iowa City VA hospital came from our department. Its members now have appointments on the college of medicine faculty. They attend our staff meetings and any clinic or conference they can. They have ward and teaching assignments on our service; and do research with us in both hospitals. In exchange we supply some consultants and attending men. We have juniors as clerks at the VA hospital. For a time we had seniors. We do not know which system is best. The essential problem is manpower. Another fact is that both hospitals, being in a small community, have more patients with chronic than acute diseases. Fortunately, with the VA hospital the number of patients for clinical teaching is more than doubled, and the acute diseases of young men are very well represented.

We have not solved many of the inevitable difficulties and have had our share of growing pains. Nevertheless, our frank discussions and probings contain the hope that our relationship will develop its full potential of mature and mutually supporting cooperation, benefiting both groups and of more importance the patients coming to us for help.

### **Research**

Research is at least as important as teaching. Clinical research, an increasingly complex form of activity, provides the stimulus and opportunity responsible for keeping many people in academic medicine. In our department we have examples of solo research, conjoint effort by a group of equals and the leader of a team of advancing subordinates. Some persons are represented in

several kinds of enterprise. Anyone with an idea is encouraged to explore and test it. Departmental funds earned in practice enable us to be liberal in modest pilot trials before we seek substantial backing. Residents and undergraduate students with interest and promise may join a group or try their hand at their own problem.

In medicine, teaching is best where the spirit of inquiry flourishes. Repeating the dogma and dicta of others is stultifying. I believe research is best where teaching also is a major activity. A medical department should foster research along clinical lines as basic and "pure" as that done in biochemistry or physiology; and for the thoughtful every patient is an example of applied research. Just as teaching should not get disproportionate attention, so Research—with a capital R—must not be the tail which wags the academic dog. Unfortunately, some of what passes for research today, issuing from a machine or technique, sprays as a sort of hose, indiscriminately, and with little regard for where, or even whether, there is a fire. And research, good or poor, takes time and increasing amounts of money to buy and run costly machines. In a full academic program time for research is borrowed from time for teaching, or vice versa. We try to plan the assignments of ward supervision and teaching to alternate with "free" periods. Certain obligations and assignments run continually, not the least of which is the private consultation practice and administrative duties, committee work and the like.

Policy regarding research is simple. It is based on complete individual responsibility and independence. This independence is real, and extends to the publication of papers. The se-



quence of authors' names is decided as fairly as we can. No one hides another's work under his own name with a footnote or postscript to indicate to the careful reader who really did it. Senior members of the staff influence the younger staff men by example and by many conversations, discussions, arguments and a few formal conferences. I have a long list of unanswered questions and problems which I may suggest to a student or resident interested in research, but without any clear idea of which way to go. Though this grab-bag method is not often productive of fruitful results, occasionally it is. It gives valuable experience to a novice in trying to translate ideas into a concrete attack on a specific aspect of a problem.

The department has run a metabolism unit including a ward which is available to anyone in our department, or in other clinical departments, who wants patients kept under constant controlled supervision. Several dozen kinds of problems have been or are being studied by many different investigators. The responsibility for the patient and his comprehending participation in the investigation is the obligation of the individual physician. In conjunction with this unit the nutrition division is very active in basic clinical research. The combined work of internal medicine and nutrition is obvious all the way from painstaking attention to feeding problems of individual patients to research of the most complex kind.

Financial support for research is staggering. Individual fortunes and foundation wealth have declined. Their benefactions, which established and set in motion so much of the pioneering of medical research in this country, provide relatively much less

support for research today. Federal funds, voluntary health agencies and private industry have assumed growing importance. This prevented a break in the sharply rising curve of research activity, and has preserved and expanded a corps of able investigators when other sources went by default. This has been and is of value beyond measure. But like most things, it has certain dangers. The ones which trouble me are these: (1) Research by project requires more foresight than most of us have in specifying our blueprints for discovery. (2) Time is wasted in making detailed applications and numerous reports. (3) The demands on the committees which allot grants are unrealistic. Since foreknowledge is impossible, the foresight necessary for progress is impossible. The most one can expect is action judged on past performance. This increases the risk of stereotyped "project research" and delays the discovery of young investigators and the development of new centers of research. (4) The concentration of power and authority in a central bureau may be abused and is inevitably costly and inefficient. Degeneration into a mutual welfare and admiration society must be resisted.

Our medical school and university have not solved the problem of supporting clinical research. In a democracy, whose responsibility is it? Does it belong to the central government? Or the states which individually support the majority of medical schools? Or is it still to depend on the bounty of persons who have accumulated wealth? Or on altruistic foundations? Or will the great industrial empires find it to their advantage to support medical research at large rather than by item? Or is it to continue along its present course?

These are as much the concerns of members of a department of medicine as they are of deans, or statesmen, or the people. For upon their sensible solution rests much of future common weal. Our current attempt to solve the problem of supporting research from the income from consulting practice is in the end self-defeating. For to earn more money to do research takes time and that leaves less for thinking about medical problems and working on them. We have had some support from the university's graduate school. My feeling is that research is a people's responsibility which can be judged best in units no larger than the state. To hope to succeed in getting state appropriations for clinical research will take an effective campaign of education of people in a region where agriculture and its furtherance by research are accepted but where the idea that the same kind of advance is possible for man has never been presented for thoughtful contemplation.\*

One of my major activities in relation to departmental research has been to foster the careful presentation of data and the thoughts derived therefrom. I have exercised editorial activities with a benevolent tyranny—never insisting that my ideas be accepted (but for correct spelling and syntax). Going over so many drafts of papers has been tiresome to all concerned. Sometimes it was to everybody's advantage to wait, repeat it, or throw it away. There has been no threat of loss of academic freedom. But it has not been allowed to degenerate into academic license. A gratifying result has been the steady improvement of staff mem-

bers in ability to deal with and express ideas. I have served several sentences on editorial boards of journals of clinical research and can express the universal wish of editors that this much departmental responsibility were exercised routinely.

Research seminars allow each person in turn to present his problems and reap the benefits of outspoken criticism. New ideas may arise. Arguments, different views or interpretations flourish. Serious errors of technique or logic, badly presented data, slides which try to put a few years' work on one graph—these come to light in the remarkable interplay of ideas in a group of individualists. After such ordeal by fire one of our staff is not likely to be disconcerted or unprepared for questions which are raised at formal meetings where work is presented.

When the results of research are ripe, publication is encouraged. We have had a liberal policy about ordering reprints, because they have been useful in teaching (in some instances we distribute them to undergraduate students), and in sending them to medical department alumni who thus keep up with the department. We massage our single or collective ego by complying with requests for reprints. We publish from 20 to 40 papers a year. Each year's offerings are bound in a volume for the conference room and a few for distribution to libraries. We write a detailed annual report of departmental activity and accomplishment. This has been useful in giving us the realization of progress which the day to day routines hide. This report goes to all members of the staff and residents in our department, other department heads in the school, the dean's and the president's offices. Some have been sent to colleagues in

\*A medical school in an agrarian society has to oppose the so long prevailing theme of "millions for manure but not one cent for literature." The cynic has too well said that hereabouts ragweed would have been eradicated long ago if hogs had hay fever.

other schools who have been interested in our methods and activities.

### Practice

No two departments of medicine handle the vexing problem of private practice exactly the same, and the method at Iowa perhaps is unique. This is not the place to give a detailed discussion of its mechanics. Some of the circumstances peculiar to the region and an attempt at their solution I will look at philosophically. I am free to do this since I had no part in originating or setting in motion what has been called the Iowa plan.

Iowa City has a population of about 20,000 without students. It is in eastern Iowa, a state mainly agrarian, with about half of its income from industry but much of that derived from or contributing to farming. There are no large cities but many thriving small cities and many towns. The population of the state has been about constant over the last 20 years. Prior to the introduction of the current practice scheme, most department heads had an extensive practice, the proceeds of which they kept. Generally no other department member had the privilege of practice, or if he did the fees went into a small departmental fund. Human nature being what it is, the chief spent much time in practice and the rest of the staff had the brunt of teaching, research and sometimes administrative chores. A system more conducive to uneasy relationships between and among departmental staffs could hardly be devised in a school where the faculty has been full-time for many years and in a university where generous salaries are not the rule. The necessary result was that younger staff people left and recruitment was increasingly hard.

In order to obviate such an un-

healthy state and to gain other ends the present plan was developed. It provides that every one in clinical departments with rank of assistant professor or above shares in the earnings in each department to an extent determined as a fixed percentage of his university salary. Thus, full professors may supplement their salary 100 per cent, associate professors 75 per cent and assistant professors 50 per cent. A 5 per cent increase yearly is permissive after two years of meritorious service as assistant professor but not to exceed 75 per cent. A similar increase after four years as an associate professor may not exceed 100 per cent. One drawback of the plan, the failure to include instructors, is now being considered for change. If a department's earnings are not adequate for the full supplement they are prorated in that department. The support of secretaries and technicians who help in the practice are paid from earnings. Members of different departments get approximately the same salary for equivalent academic rank.

From the fees we pay for liability insurance for staff and residents, scientific society dues and some special department teaching or research activities. The surplus at the end of the year is retained in a departmental trust fund which is used for research, teaching, trips to meetings, refresher courses, special visits to other medical centers, journal subscriptions, books, special apparatus, extra secretarial work, research pilot runs and technicians' salaries. At the end of the year the residue, which in this department has been as high at \$13,000, goes to the central scientific fund which is administered by a medical school committee for the good of the entire college of medicine. Much of it is used in the basic sciences.

## *A Department of Internal Medicine*

The medical department has only fourteen beds for private patients, so the service is generally for diagnosis rather than therapy. The bulk of the practice is office consultation. We see about 400 patients a month with all but a tiny fraction referred by physicians. About 40 per cent of the private patients come from outside the state. Our meager office facilities were not designed for office practice, and the suddenly imposed 40-hour week for nonprofessional and laboratory employees almost ruined the chance to practice good medicine conveniently.

One of the most frustrating aspects of our consultation practice is the archaic mechanics of the milieu in which we work. No magic carpet carries the patient to the scene of tests and procedures, and the perplexity of a fractious elevator is not without its terrors, especially since it is sometimes the patient's first experience. No band of fleet couriers corrals the data for our leisurely contemplation. In fact, if tremendous thought and effort had been expended to design a craft with more built-in headwinds, it is not probable that the result would surpass our present structure. Of course the physical plant was not designed for small group teaching, clinical clerks in increasing numbers, or the present day enhancement of medicine by so many laboratory studies. Perhaps the one saving grace of our methods lies in the fact that the patient has one physician who takes his own history, does his own examination and is interested in the patient's troubles. In some instances our only additional accomplishment is explaining what was found in some other review.

A real burden on the staff has been the responsibility for medical care of faculty members and their families, colleagues, students, nurses, the hos-

pital's technical and administrative people, though we are not in a position to render the care owed the patient by a personal physician in practice. Were it not for the compactness of the department's space in the hospital, a small compensation for inadequate room, the basal requirements of coming and going to our many tasks would crush us. With minor exceptions the wards, teaching and research laboratories, classrooms and private beds are on a single floor in the hospital.

Not the least value of the private consultation practice is the experience we all have of being personally responsible for the care of individual patients. This provides a fruitful source of useful material for discussion in teaching. Private patients are used in clinic, seminar and conference teaching, but we do not assign them to clerks. This is because of logistics, not principle.

A factor which is important in our consultation practice is the seasonal peaks of farm activity, which are dips in our consultation practice, since elective visits defer to the demands of planting, harvesting or the great obstetrical crises of animal husbandry. Times of heavy teaching load coincide with most active consultation demand.

### **How Things Run**

Departments may be run by an autocratic boss surrounded by yes men, who may not be aware that he is domineering, or may be run along democratic lines which sometimes are so tenuous that drift may be a better verb than run. The continental and British systems have tended to operate with one all-powerful chief, rigidly fixed in unquestioned authority at the top of the heap. His caste is elite, his hegemony secure.

He basks in the eulogies of his minions. Such has been the custom in American medical schools, but it is declining. It has occurred more often in fields of specialization developed around techniques such as general and special surgical subgroups than in broader disciplines such as medicine or pediatrics. Perhaps this is an inevitable by-product of the vast complexity of general medicine, which perceptive physicians realize will forever elude complete mastery. However that may be, there is an increasing trend for departments to be led and guided rather than be run.

A department of medicine may be thought of as a social organism, more complex than the family but not so complex as a medical school or hospital. It shares characteristics of the defensive herd rather than the aggressive pack in Wilfred Trotter's meaning for the terms. Any biological unit is composed of members or organs which subserve special functions and can thrive only because an integration and a mutually communicated cohesion permit sub-units to specialize while integral with the entire organism. Each contributes to the whole and the whole makes each possible. In a department run along autocratic lines the head might be considered as the nodal point of a primitive nervous system, the members being the nimble fingers to do his bidding. Autonomous function is impossible, and separate growth is not tolerated beyond conditioning of reflexes useful mainly to the head or chief. This makes for a neat, precise and powerful but rigid system. The democratic department is not so nice. It has rough edges and cannot snap its heels prettily for parade. If it were not for all the confusion now swirling like a blizzard of uncontrolled facts about the concepts of hormones and

stress, I would liken the head of a democratic department to some crude endocrine gland, not so impressive or elegant as the pituitary but with a similar influence—subtle, slow, not precise or exact, often merely permissive, influencing cells near and far but letting them grow and develop their own talents and traits. Some develop to the extent of budding off as new leaders and moving on or taking over.

But back to our own departmental organism which obviously, I think, runs along democratic lines. The age-old worry of special or general focus we attempt to solve in compromise. By the nature of our group each has to combine a wide general knowledge of medicine with expert proficiency in one or more special fields. Staff members in rotation have charge of the ward services, two men sharing responsibility for a ward at any time. There are no separate wards reserved for special diseases or pieces of the body, so each physician on the staff may encounter almost any kind of person or problem. Their care he must be able to supervise and their problems he must use as the matrix of his ward teaching of undergraduate, resident and junior staff. Ready consultation is available from anyone with special skill in a particular problem. Thus by necessity as well as by policy we must be physicians first and then specialists. Without a broad base of general medicine too many of today's practicing specialists, staying close by their kind of tree, never see the woods at all. However excellent specialization has been for the advance of technical knowledge, it is ruinous in practice unless planted on the firm foundation of general medical learning.

Because of the swarming tangles of the jungles of medical knowledge,



## *A Department of Internal Medicine*

special skills are needed in a complete department. The plethora of medical facts has outdistanced the mental capacity of the most receptive and hard working physician just as the corpus of medical knowledge has outrun the ability of a single man to compass it in a textbook. That this is unfortunate makes it not less true. In our department most but not all of the accepted subdivisions of general medicine are staked out by one or more of us. In some parts we are stronger than others, both in capacity and numbers. This comes from the attraction which a person or group engaged in active thought and investigation holds for the younger physician as he develops. Part is fad, or personality, or the freedom of the individual to move in a direction of his own choosing. The concentration of interest influences practice, research and teaching, especially assignment of lectures.

The intercommunications in a system with analogies to an endocrine complex must provide means for the units to reflect back on the central gland, and on each of the other units. There are many ways in which this can be encouraged. Upon my arrival here as chief of service and department head my first move was to establish a staff meeting held every week. At first I read notices and letters and reported on meetings of medical school council and clinical department heads. This was met with circumspect but unanimous silence. Before long there was eager discussion of the most diverse topics, pertinent and impertinent. Once a month the meeting is attended by our nursing supervisors and the senior residents. This gives to them a sense of belonging, even though they rarely use it as a forum for sounding off.

Those of us who have watched the

staff meeting for six years have recognized its crucial role in knitting very diverse elements into a unit. It is the way we teach each other. As with any democratic process it works slowly, takes infinitely longer to reach decisions than does an act of arbitrary efficiency. Patience is often taxed by the quaint perverseness of the individual as he behaves in a group. Sometimes we yield to the intoxicating pleasure of the sound of our own voices without the wise excisions of thoughtful restraint. But even this serves as useful catharsis. We learn toleration. The give and take teach us that the harumphs and clucks may come from uneasiness rather than obtuseness.

The democratic system, with all of its risk of frittering diffuseness, provides opportunity for giving direction and tone. The open discussion, criticism, argument and debate in the staff meeting help glue together in compact aim and purpose very diverse and differing people whose sense of belonging to a group builds a solid and warming morale. Independence is not stifled but encouraged. The unit is integrated without requiring threat of outside pressure or attack to force it together. We are proud of each other's progress and achievements and depressed by shortcomings. This mutual regard and relaxed atmosphere is the first thing noticed by an outsider. It has not bothered me that a visitor at our staff meeting was not certain who was the department head. Who knows?

Sharing our problems, we also share responsibility. Decisions usually are reached by consensus. Rarely do we actually vote. Only in exceptional circumstances is a veto used. Some administrative functions are given to individuals, others to "committees" of two or three. Thus, direction of senior



teaching is handled by one and junior teaching by another; correspondence about residencies, preparing schedules for ward teaching rounds, lectures and staff assignments, journal subscriptions, representing the department in special clinics—each has a person assigned. Those with skill at organization have most of it to do, and the mechanical work is divided as evenly as is feasible.

My taste for routine administration is nil but there is an irreducible residue which must remain. This includes major problems with other departments, hospital administration, nursing and the medical college. The other administrative function is nothing less than being readily available to anyone for question, comment, advice or suggestion; and there is no substitute for it. It is exorbitant of time and destructive of leisure, but it is the key to a democratic system.

In spite of regular staff meetings and personal interview there are other channels of communication. A departmental routing sheet is used for exchanging ideas and sending out information. Memoranda are circulated. Bulletin boards, though solidly covered, are not very valuable. There is frequent exchange of information; particular journal articles are marked and sent around to those with special interests.

A very important physical unit of the department is the conference room and library. By ingenious design it can be divided into two small rooms or made a single room where 50 can be seated comfortably.\* Sturdy folding tables, chairs, projection equipment, light controls, sliding blackboard and x-ray viewing boxes have been combined for utility and flexibility. The walls have stacks for

60 current medical journals, and bound volumes of the dozen most used journals for the last 10 to 15 years are at hand. This quick access to books and journals makes reference easy and encourages the residents and staff to read. Several hundred reference books, texts and volumes on history, ethics and medical philosophy complete the library. Photographs of the previous department directors adorn the wall at one end of the room. A special shelf of historical books is a memorial to a former department head, Campbell Howard; and a shelf of books on medical ethics and philosophy is a memorial to Mayo Soley, a former member of the department and dean. Several of us have good working libraries or historical collections in particular fields, and these, along with a number of personal reprint collections, are used widely. New books are added through purchase or donation, and old journals are given to the medical library as duplicates or for exchange.

#### Miscellaneous

In order not to exceed reasonable limits of space, many things must be left out. Others—notably research facilities, programs and accomplishments—are barely touched. Members of our staff are in charge of physical medicine, nutrition, the blood bank and the sterile fluid service. We supervise the general practice residency. Our postgraduate teaching emphasizes the utility of our regular rounds, clinics and conferences to which all physicians are invited and some attend. We have organized short courses for doctors of the state, but the poor attendance halted this activity. We have had a number of physicians from other countries on

\*This accomplishment is uniquely the result of Dr. E. L. DeGowin's thought and work.

## *A Department of Internal Medicine*

the staff or as voluntary assistants or residents, a mutually beneficial experience. We have assisted in teaching nurses in a nursing school where there is complete separation of the service and academic functions, a dichotomy which medicine fortunately escaped after the Renaissance when the barber-surgeon kept alive the spark of clinical arts in his close contact with the patient. Our archaic physical arrangement of office space adds to the already vast and increasing burdens of an overworked secretarial staff. One of the real problems has been the huge volume of secretarial and paper work demanded by an active and productive department. Successful departmental function only increases the load.

I shall not consider the multiplex external relationships of the medical department to other clinical departments and to the basic science groups. An example is our participation in teaching physiology and many common research efforts. The central role of general medicine and surgery in medical teaching, practice and research is recognized, though not always without uneasiness in a school whose specialties have long had a superb record. Our relations with the dean enjoy on a large scale the democratic system operating in the department. As individuals our active participation in university life is made easy because the community is small. The broadening influence of association with many actively thinking people in remote and near fields of interest is stimulating. It exemplifies on a small scale the wide ramifications of the social responsibilities of physicians and their impact on society. Today a cardinal need is that people generally have a better understanding than they do of medical education, practice and research. If

this does not come from the teachers, it will not come at all.

No region of interrelation is more beset with the hazard of misunderstanding and frustration than that of hospital administration and clinical departments. Caught between the incessant demands for equipment, apparatus and technical service on one side, and increasing costs, rising wages, constricting work week and competition for manpower, the hospital administrator's life is not easy. His problem is compounded in a hospital where requirements for teaching may conflict with economical efficiency. Unless the hospital administrators have an understanding of the primary attributes of medicine as a profession, their eagerness to run a hospital as an effective business enterprise creates and sustains friction with the clinical departments.

It might be supposed that all the activities discussed so far would satisfy the most stringent definition of *full-time*. But this is not so. Progress in academic medicine is rarely separated from increasingly important and time-devouring responsibilities in local, regional, state, national and international societies of special and general scope. Administrative duties, the dubious rewards of capacity and success, arrive at a time when the demands of academic life are in full tide. One gets elected and appointed to offices and committees. Voluntary health groups need help and advice. Meetings, speeches, panels and discussions invade the schedule and destroy the last faint hope of leisure. Some of us are victims of our interest in writing and spend untold hours in reviewing and editing manuscripts, an occupation which gets more depressing as the vast and growing swarms of barely literate medical writers grind out paper after paper.

Senior staff members have an obligation to help their junior colleagues gain recognition and reputation for their achievements, and this in its many ramifications takes time and thought and thoughtfulness. And to all these things I might add more, but the story has gone far enough already.

### Conclusions

In the foregoing pages I have examined and discussed how our department of internal medicine works, its aims and its functions. A contemporary department is not a hydra-headed monster, each of whose necks is a Gordian knot, but still its complexity is ample. Internal medicine in its academic aspects, a remarkable combination of clinical arts, applied science and basic science, appeals for many reasons and attracts people radically different. A department functions well when the divergence of individuality is tempered by common purpose and shared experience. Strong centripetal forces must balance the splintering effect of diversification. Exchange of information is the key to good morale. I have likened our system to a primitive endocrine complex, with the department head influencing rather than commanding, permitting development and changes of the units and developing himself as the departmental organism grows. In a completely self-contained unit such as ours everyone must have or get broad competence as a physician. Special interests and skills are added. We do not segregate patients, lesions or talent. But we must guard against diffuseness and encourage the growth of special interest and investigations.

Our university has not solved the problem of paying for research and teaching. In our present situation the time spent in practice earns money

for salaries, and some to do research. But practice erodes the time so that less is left for research. In such a crowded program, research is done by those who have the impelling desire to do it, at what price they know well. The illusion of leisure vanished long ago. Contemplation and meditation we cherish because of its high cost. Our teaching is directed by individual attention to students in small groups. Rather than try to synthesize, correlate and integrate the material of medicine for our students, we try to inculcate attitudes, train aptitudes and foster skill, so that the student learns to learn. We hope our modest successes make up for our obvious failures, and we selfconsciously strive to improve our capacity and our results.

Anyone who is willing to endure the turmoil and the pangs of trying to guide a medical department requires an array of talent, strength and wisdom far beyond the possible. Deficiencies can be corrected only up to a point by hard work. Perhaps the requirements are ruinous. Certainly they are unrealistic.

Among the neglected duties of a department head is the digesting and collating of his experience so that others may profit by his errors, learn by his troubles, follow the good and avoid the bad. Much of this neglect no doubt stems from the supposition that the ground rules are axiomatic. This was my assumption when I left the loyal opposition and took the helm. But learning things by trial and error can be helped by the judicious study of the experience of others so long as it is not used as a cook-book or answer-book. I hope that this discussion of our practices, ideas and ideals will be useful to my student companions in academic medicine, now and in the future.

## Validity and Reliability of the New Objective Tests

JOHN T. COWLES and JOHN P. HUBBARD

A LONG-RANGE program to improve their written examinations has been undertaken by the National Board of Medical Examiners with the cooperation of the Educational Testing Service. The work has been supported by the John and Mary R. Markle Foundation. Sufficient progress has now been made to provide evidence of the validity and reliability of these examinations.

New objective, multiple-choice tests in two subjects, pharmacology and medicine, were developed over a one-year period and introduced into the testing program in 1951; three additional tests were similarly developed for use in 1952 in pathology, pediatrics and public health and preventive medicine. Six other new tests were developed for use in 1953 in anatomy, bacteriology, biochemistry, physiology, obstetrics and gynecology and surgery. As each objective test was introduced, it replaced the essay type test in that subject.

Although the new, machine-scorable, multiple-choice tests represent immediate and marked increase in objectivity, rapidity and fairness of grading for these national board written examinations, it is not a manifest corollary that the tests represent im-

proved measures of proficiency in these subjects. An important part of this test development project, then, has been a series of planned studies to evaluate the adequacy of the tests.

It should first be pointed out that the best guarantee of validity of any achievement test depends upon those who actually write and edit the test questions. The new national board examinations are prepared with the utmost care, and a separate committee is appointed for each subject by the national board. Members of these test committees are medical school department heads and teachers with recognized prominence in their own fields, selected on the basis of wide geographic distribution. All tests are outlined and the items are written by these committees. Technical guidance in the design of questions, and subsequent editorial services, are provided by the test development staff of the Educational Testing Service. The work of each committee member is critically reviewed by each other member of that committee to insure that the questions are well constructed, appropriate, free from ambiguity and representative of important aspects of the subject and of high standards of medical education. Special effort has been made to devise penetrating questions requiring the exercise of reasoning and judgment rather than mere rote memory or recognition of facts. For each test,

Dr. Cowles is senior project director of the Educational Testing Service. Dr. Hubbard is executive secretary of the National Board of Medical Examiners and head of the department of preventive medicine at the University of Pennsylvania School of Medicine.

the test construction process requires almost one full year.

To the extent, then, that each test conforms to accepted teaching objectives of medical educators and also utilizes the best available techniques of measurement of those objectives, the first prerequisites to test validity have been met. But, although a test is based upon the best judgment and skill of educators and test technicians, it nonetheless needs confirmation of its validity by the correlation of its scores with an appropriate, independent criterion.

### Statistical Study

An initial statistical study, undertaken in 1951, was the direct comparison of essay and objective methods in two tests: pharmacology and medicine. Each test was part essay and part objective and was administered to national board candidates at the same test administration and under closely parallel conditions. The results of this earlier study have been reported in this Journal.\* In general, the objective tests consistently correlated higher than did the essay tests with independent estimates of student proficiency by their instructors. The objective tests also demonstrated a reliability of measurement which is more adequate for precise grading, and a distribution of scores which provides better differentiation among candidates than is characteristic of essay tests graded in the usual manner. Moreover, the objective tests and their individual questions lent themselves to more exact statistical appraisal than did the essay test questions, thereby permitting subsequent improvements in the objective type tests.

\*See Cowles, J. T. and Hubbard, J. P.: "A comparative study of essay and objective examinations for medical students." *Journ. Med. Edu.*, Vol. 27, May 1952, Part 2.

Each objective test was thoroughly analyzed in regard to various characteristics such as test reliability, item discrimination, item difficulty, score distribution and intercorrelations of tests or parts of tests. On the basis of these analyses, the first objective tests were given a major revision by the committee before the next forms of those tests were administered. Such revision and improvement are now routine with all objective tests of the national board.

A second set of studies, not previously published, is based upon the first full-length multiple-choice tests of Part I and II of the national board examinations. These were introduced in April and June 1952, and consisted of tests of two and one-half to three hours each in five subjects, including those two subjects for which earlier forms were used in combination with essay tests the previous year. As for the previous study, those medical schools which use the national board examinations for all students were asked to provide, prior to the examinations, ratings of the proficiency of students in the subjects of the tests. The ratings were a simple listing of students designating the top fifth, middle three-fifths and lowest fifth of the class in each subject. Again, correlations of test scores and these school ratings were computed as a measure of the validity of each test for assessing student proficiency. Ratings were provided by 14 schools in Part I subjects and by 10 schools in Part II subjects.

A third set of validity studies have now been completed involving the remaining six subjects of the national board examinations. Objective tests in these subjects were developed in the same manner as the earlier tests. Twelve schools furnished ratings in these four Part I subjects, and 12



TABLE I  
Validity and Reliability Coefficients for  
National Board of Medical Examiners Tests, 1952-53

Test	N	Scaled Score		Std. Dev.	Validity rc	Reliability rt***
		Mean				
		Part I				
Anatomy**	897	81.24	5.79	.47	.94	
Physiology**	946	80.42	6.17	.46	.87	
Biochemistry**	893	81.29	5.69	.58	.92	
Pathology*	1162	79.48	6.37	.41	.88	
Bacteriology**	907	80.59	6.39	.48	.87	
Pharmacology*	1162	79.69	6.33	.48	.88	
Part II						
Medicine*	733	81.44	4.83	.38	.92	
Surgery**	925	81.88	5.01	.27	.84	
Obstetrics & Gynecology**	933	82.09	5.07	.33	.81	
Public Health*	733	81.96	5.10	.24	.77	
Pediatrics*	733	82.04	4.95	.28	.80	

\* 1952 validity data. Correlations were also obtained from 1951 data for pharmacology (N = 546, rc = .49) and medicine (N = 636, rc = .37). All validity coefficients are based on pooled total group.

\*\* 1953 validity data. Each coefficient represents a weighted z-average of the validity coefficients computed for each school separately.

\*\*\* 1953 reliability data for each subject, based on different samples of 370 examinees each.

schools furnished ratings in the two Part II subjects. Correlations of test scores and school ratings were computed.

Table 1 presents a summary of the results of these evaluations of all 11 new tests. For the 1952 tests, data from all schools participating in the validation study of each part were pooled before correlations were computed; for the 1953 tests, the validity data were treated separately by school and the test-rating correlations were then averaged by weighted z-transformations. Reliability coefficients, by Kuder-Richardson formula, are also presented in the last column of Table 1.

The validity coefficients are all very satisfactory for tests of this nature at this level of professional education, providing, of course, the choice of criterion measure is accepted. All coefficients differ from a zero correlation

at a high level of significance for samples of the size shown. It may be argued that the tests measure functions not evaluated in instructors' ratings and vice versa; hence the ratings may not be parallel measures of the same learnings. If so, the ratings could not be expected to correlate highly with the tests. Even if similar functions are measured in tests and ratings, there is the real possibility that a test samples certain functions not covered by the particular instructor. However, the very length (or rather, breadth) of the objective examination is an assurance that varying curricula will not be inequitably covered, since no student is expected to know the answer to every question. This flexibility is an important asset, since it assures that the test need not prescribe the content of any course of instruction.

Another consideration in validating



a test against school grades is the problem of obtaining statistically reliable ratings by instructors when complex performance is being evaluated without detailed definition of which aspects are to be rated or when the ratings are based on evaluation by different instructors of different aspects of performance. Unless pooled ratings are on the same aspects and on a similar scale they may be quite unreliable (inconsistent), and this will limit the correlation of tests with such a criterion.

Various hypotheses may be suggested for the evidently lower validities for Part II examinations as compared with Part I examinations. This difference may be due to increased complexity of the Part II subjects, and increased variability of the meth-

ods of grading students, with consequently lower reliability of instructor ratings. Furthermore, the upper class students may demonstrate greater homogeneity of performance as a result of training and the dropping out of some students during the successive years. Differentiation by their instructors is thereby more difficult.

In reviewing the reliability coefficients, it must be borne in mind that these coefficients reflect the internal consistency of items in each test, rather than estimated test-retest correlation. Each estimate is doubtless attenuated by any significant heterogeneity in subject-matter of the test, and this should be taken into account in comparisons of different tests. These coefficients all appear quite satisfactory. The standard errors of

TABLE 2  
Validity Coefficients for Each of Six Tests, Separately by Schools,  
National Board of Medical Examiners, 1953 Test

Medical School	Anatomy		Bacteriology		Biochemistry		Physiology		Surgery		Obstetrics and Gynecology	
	N	rc	N	rc	N	rc	N	rc	N	rc	N	rc
A	**	**	50	.17x	**	**	**	**	47	.52	47	.13x
B	***	***	***	***	***	***	***	***	78	.48	78	.20x
C	68	.52	69	.56	69	.41	69	.45	70	.07x	70	.15x
D	69	.49	71	.49	70	.62	70	*	60	.06x	60	.23x
E	23	.36x	21	*	13	*	9	*	67	.20x	67	.32
F	105	.36	109	.55	106	.52	107	.48	***	***	***	***
G	63	.49	71	.30	72	.64	71	*	91	.26	70	.52
H	87	.40	94	.55	94	.59	92	.52	73	.34	82	.26x
I	117	.63	***	***	116	*	117	.40	138	.18x	138	.37
J	***	***	***	***	***	***	***	***	120	.25	120	.53
K	131	.50	127	.38	115	*	127	.32	23	.00x	23	.18x
L	68	.45	68	.48	68	.58	68	.46	60	.26	60	.40
M	118	.45	121	.60	118	.65	120	.54	***	***	***	***
N	48	.47	106	.44	52	*	96	.52	98	.46	98	.18
Total												
N/Avg.rc	897	.47	907	.48	893	.58	946	.46	925	.27	933	.33

\* A single asterisk in the table indicates that a large number of candidates for whom there were ratings did not take the test and that among the candidates who took the test there were disproportionate numbers rated in the highest 20 per cent and the lowest 20 per cent of their class. Consequently, no validity coefficient is reported.

\*\* At school A, the candidates who took the anatomy, biochemistry and physiology tests were not the candidates for whom ratings were available. Consequently, no validity coefficient could be obtained.

\*\*\* A triple asterisk indicates that no ratings were provided by the school for the indicated subject. Therefore, no validity coefficient could be obtained.

x Coefficient not significantly different from zero.

**TABLE 3**  
**Intercorrelations of Test Scores for Part III**  
**National Board of Medical Examiners Tests, April 1953**

N = 370\*

Subject	Medicine	Obstetrics & Gynecology	Pediatrics	Publ. Health & Prev. Med.	Surgery
Medicine	—	.57	.65	.58	.75
Obstetrics & Gynecology	.57	—	.58	.55	.67
Pediatrics	.65	.58	—	.62	.60
Public Health & Prev. Med.	.58	.55	.62	—	.56
Surgery	.75	.67	.60	.56	—

\* Spaced sample from total group tested

Table 3 is presented to indicate the inter-relationships among test scores for candidates who took all of the Part II tests in April 1953. Similar correlations were not computed for a like sample from the June 1953 Part I group, since not all Part I candidates take all tests at a single test administration. It is expected that a larger and more representative sample for Part I will be available when June and September 1953 data are combined.

measurement, in terms of reported-score units, range from 1.3 to 2.4 points for the 11 tests, most of them being in the vicinity of 2.2 points.

Table 2 presents the correlations of test scores and school ratings for each subject, separately by schools. The Part I coefficients are very satisfactory; all but two differ significantly from a chance range for uncorrelated measures in samples of this size. The Part II coefficients, however, vary more widely, and several are within the chance range for samples of this size. Here again we note the general difference between the Part I and Part II validity coefficients. We also see the possible effect of local differences in school ratings, or the possible differences in curriculum and instructional emphases, which have attenuated the relations between test scores and ratings at particular schools. It is impossible to account for these fluctuations from school to school without recourse to information which was not available in this study.

Table 3 presents intercorrelations of test scores for a sample of Part II examinees.

#### Summary

1. During the past three years ob-

jective, multiple-choice examinations have been newly developed as a co-operative enterprise by the National Board of Medical Examiners and the Educational Testing Service.

2. The objective of this test development program, carried out with Markle Foundation support, has been to improve the written examinations, not only in regard to the reliability and fairness of grading, but more importantly in the validity of these tests as measures of student proficiency.

3. The validity of the new tests has proved to be very satisfactory. This has been amply demonstrated by (a) the direct participation of outstanding medical educators and test technicians in the construction of the tests, and (b) the significant correlations of test scores with independent ratings of student proficiency.

4. The reliability of the new tests is quite high for tests of this kind, thereby assuring precision and stability of the score scale. This reliability of measurement is largely due to the use of a large number of questions on each test in which the selection of each question has been guided by detailed statistical analyses; in addition, the tests are accorded standard techniques of machine grading and score scaling.

# The Financing of Medical Schools

## A Proposal

BRIAN BIRD

**D**EFICIT FINANCING of medical schools has been an established fact for many years. Not only is deficit financing an established fact, it seems also to be an accepted fact. How such a condition was established and accepted are questions which should have answers. Too often these things creep so slowly into existence, come so unspectacularly to full growth and gain so firm a place in our thinking, that we have no occasion to question their origin or their necessity. The facts in the matter are clear and undisputed. Tuition charged to medical students for many years now has not paid their educational bill, and increasingly year by year tuition pays a smaller part of that bill. The deficit—the difference between tuition paid and actual cost—has, so far at least, always been met: it has been met in state medical schools through government subsidy and in private schools through gifts, endowments, and to an increasing extent, through government grants. In view of the fact that the bills always have been met, perhaps there is nothing to be concerned about and no other solution to financing need be sought.

There is of course the possibility

that costs will continue to rise, or—what seems more likely—that private sources of funds will decrease until finally a point is reached where none but state schools will be able to pay their bills. Then naturally the country will have left only state schools able to educate doctors. Many arguments can be brought, and have been brought, regarding the effect of such an eventuality, and there are those who sincerely believe that no tragedy would result if all schools came under state control. On the other hand, there are those who feel strongly and for many good reasons that private medical schools should continue their existence free from such control.

In attempting to make possible a continuation of private medical education, emphasis has always been placed upon attempts to increase gifts and endowments; i.e., to bring more outside money in to help defray expenses. Appeals for money are made to all sorts of groups—to alumni, wealthy individuals, fund-raising organizations in behalf of particular research programs, corporations, charitable foundations and, reluctantly, to federal, state and municipal governments.

Appeals are made not only to many different groups, but are of themselves of many different kinds. Alumni give because of their loyalty

Dr. Bird is assistant professor of psychiatry in the department of psychiatry, Western Reserve University School of Medicine, and associate director of the department of psychiatry at University Hospitals of Cleveland.

## *The Financing of Medical Schools*

to the school and because of their generosity. Additionally, and perhaps most importantly, alumni give because of their gratitude and their guilt at having received, when they were students, something for nothing. Guilt, however, is not always the wonderful stimulus for giving that it seems to be. On the contrary, guilt very often prevents giving or limits it severely.

Wealthy people often contribute because they can endow a chair and through it perpetuate their name, or they can create a memorial to a relative, or they can escape income taxes, or they can salve their guilt. Or—and one should not forget it—wealthy people often give simply because they enjoy giving.

A different and powerful appeal presents itself to those who oppose government control. These people believe that the private practice of medicine is the keystone of free enterprise and that if medicine falls, an avalanche will follow.

Still another appeal, popular and effective, is based upon the warm belief of laymen in the practice of medicine as a charitable, humane, self-denying calling. It is enough, they commonly believe, that the medical student dedicate himself to service to his fellow men; he should not, in addition, be asked to foot the staggering educational bill.

It is not implied, and should not be inferred, that medical schools make these appeals or others in cold-blooded words. They do not. But the meaning is inherent in all such requests for financial help. Even this does not imply that such approaches are necessarily or always improper or incorrect. For one thing, these appeals apparently work and money is brought in. For another, they serve an estimable purpose in that they

bring many people together with medicine, and bring medical schools into community spheres of interest. And of course such appeals and the money they bring in are essential in supporting research in all areas.

However, the goodness in these methods should not alone determine whether they should continue. In all of them there is a passive assumption that the community should support medical education.

Whether this assumption is true is a matter for serious consideration. Is it absolutely essential to get outside support? Is it even wise to seek outside support? Is it a tried and true fact that tuition cannot pay the whole amount of medical school costs? Is it not possible that medical education would gain immeasurably if costs were met internally?

Let us examine these possibilities and let us ask first about tuition. If one looks only at the poverty of medical students, the answer is clear: tuition cannot be increased sufficiently to meet costs. Most students simply don't have it, and to make medical education available only to rich men's sons is unthinkable. But why should one, even for a moment, look upon the poverty of students? Should one not look instead upon the finished product? Should one not look upon the financial ability of the people who have undertaken this expensive training?

### **Why Not Doctors?**

Doctors, the finished product, are not poverty-stricken. They are, rather, among the higher income groups, the good earners in any community. Looking at their financial standing, it is ridiculous to consider that they should receive public support. Yet they all have received such

support. Every doctor has had something for nothing, and a good lot of that something too. Speaking in terms of money—and that should be no disgrace—the doctor has received free, without any incumbrance, many thousands of dollars, which in turn enables him to earn, honestly, respectably and rightfully many thousands of dollars a year for life.

This does not mean that doctors make too much. They do not. If anything, they should earn more—not less. A high level of medical practice is an extremely skilled and responsible occupation and should bring a very high financial return.

But the point in question is not that doctors make a lot of money. What is in question, what is paradoxical, is this: isn't it odd that they should not themselves pay in full for the education which makes it possible for them to earn so much?

In view of the fact that the practice of medicine is not altogether a charitable, self-denying calling—that, as well, it is a money-making occupation—it is difficult to understand an appeal to the public or to the state for the education of people who, as a result of that education, will be provided for so comfortably. Not only is it difficult to understand, it seems wrong. Doctors are well able to pay in full for their own education and without doubt should do so.

This, of course, is heresy—or at least so it will seem to many. To broach openly the fact that doctors profit from illness, to suggest openly that doctors should pay for their own education in a businesslike way, to do anything of this kind will be interpreted as an unwarranted attack upon the role of the doctor as a Good Samaritan. Such a reaction is to be expected. It is only hoped that such feelings will not completely cloud the

issue. The doctor's role as a healer, a helper, a man of goodwill, must be preserved and can be preserved without cloaking him in a disguise.

### A Legal Debt

In addition to this objection—the emotional one—there are many others standing in the way of making medical education self-supporting. First among these difficulties is the fact that the doctor has his money only after his education, or the expensive part of it, is over; as a student he has nothing. But as a student he is a potential earner, and this should be realistically regarded. Why would it be so difficult to have the student borrow the funds from the school and pay them back? Is this not something for some medical school brave enough, forward-looking enough, to experiment with? What would happen if the school were to say to every beginning student, "You will, year by year, incur an indebtedness to us of \$2,000 (or whatever), which must be paid off within 10 years (or 15 years) of graduation. It is a legal debt, honest, straightforward, businesslike and respectable. Take it or leave it?" Would that school get no students? There is every reason to believe that the school would get students—plenty of them. Moreover, there is every reason to believe that they would be the best, the most eager, the most self-respecting students ever seen in a medical school.

Medical practice is changing. Medical education is changing to keep pace. Why not change the financing of medical education at the same time—take it out of its archaic past, make it adequate and stable, give it decency and honesty? If someone wants the financial reward of being a doctor, he

## *The Financing of Medical Schools*

should be more than willing to pay for it.

Also involved in the financing of medical schools is one of the great issues of the day—private medicine vs. state medicine. The advocates of private medical practice should recognize that one of the greatest threats to its continued existence is free or subsidized medical education, subsidy from any source. The increasing extent to which medical education is a charitable enterprise and the decreasing extent to which students pay for their own education will lead inevitably to a cry for salaried physicians paid by the state and paid less and less. Why, the cry already is, should doctors who don't pay for their training be allowed to profit from it? That is the pressure which comes from outside. More important is the pressure which comes from within. The medical student who has had dinned into his ears, year after year, the wail of the educators that he does not meet the bills for his education, develops such a feeling of guilt that he cannot as a doctor stand up to fight for his freedom.

Regrettable as it may be, it is axiomatic in our society that he who accepts charity gives in return his own freedom. Any plan that would allow the doctor the respectability of financing his own education would be a great deterrent to the state control of medicine.

In considering the proposal that

doctors, after graduation, pay back to the school the cost of their education, an objection is sure to be raised that some doctors could not afford to do so. While it would be easy for the average practicing physician to pay off his full indebtedness to the school, what about those who go into research and teaching? At first the problem seems insurmountable, but truthfully it has the simplest kind of solution. The question needs only to be changed around and asked this way: why are teachers and research workers in medical schools paid so little that they cannot meet their indebtedness for their education? That is the decent question, and the answer is that they should be paid more—much more. Further, if tuition were raised to the level of full cost and doctors were allowed to pay for their own education, the schools would have sufficient funds to pay their faculty proper salaries. It would be easy, and with such a change a real and insufferably plaguing problem would be honorably met.

Perhaps there are many other arguments on the subject of financing medical schools. Certainly more are to be expected, both pro and con, and all should be voiced and heard. But from whatever side the problem is approached, the one significant question must be kept clearly evident: is there any real reason why doctors should not finance their own education?



## Group Instruction in the Art and Techniques of Lecturing

JULIUS H. COMROE JR.

**B**EFORE the 1953 Teaching Institute sponsored by the Association of American Medical Colleges on "The Teaching of Physiology, Biochemistry and Pharmacology," a questionnaire was sent to more than 1,200 teachers in these three basic medical sciences to obtain information and opinions on many problems in teaching. Two of the questions asked were:

1. Do you believe that instruction in the art of teaching the basic medical sciences can improve an individual's teaching ability if he is not a "born teacher?" Only about 4 per cent answered "never;" the remainder answered "occasionally" or "usually" in equal numbers.

2. Would you enroll in a course of instruction in teaching techniques (with emphasis upon teaching the basic medical sciences to medical students), if given by acknowledged experts? Approximately 72 per cent of the teachers answered in the affirmative.

\*55 per cent of department chairmen, 50 per cent of professors, 75 per cent of the associate professors, 81 per cent of the assistant professors, and 86 per cent of the instructors answered in the affirmative.

Dr. Comroe is chairman of the department of physiology and pharmacology, University of Pennsylvania Graduate School of Medicine.

The Journal is pleased to announce that the final report of the 1953 Teaching Institute on Physiology, Biochemistry and Pharmacology, of which Dr. Comroe was chairman, will be published as Part 2 of the July issue.—*The Editors*

tive,\* indicating that the great majority were willing to learn more about the art and techniques of teaching if a suitable means were

available.

Some faculty members, however, expressed the opinion that (a) medical teachers would be unwilling to accept "professional educators" in schools of education as experts in the field of medical education, or (b) that there were no acknowledged experts among teachers in the basic medical sciences, or (c) that if there were, these would be reluctant to claim expertness. I would like to recount here briefly a way of helping instructors in the art and science of lecturing that I have used for the past several years, which does not require the participation of an "expert." A somewhat similar system was also employed successfully in Canada in the summers of 1950 and 1951 under the sponsorship of the National Conference of Canadian Universities (see T. H. Matthews in *The Universities Quarterly*, 1951; D. L. Thomson in "School and Society," 1952).

I asked my staff if six to eight would volunteer to cooperate in a group enterprise directed toward improvement of the lecturing ability of every member of the group. Each member of the group was asked to prepare a 15-minute talk, preferably one illustrated by chalk diagrams or lantern slides. The subject of the talk was unimportant but the speaker was asked to state at the outset what he intended to present and was required to complete his presentation within the scheduled time. The talk was recorded by a soundscraper.

The audience consisted of the other members of the group, each of whom was aware that he would be speaker during some subsequent period. Every member of the audience was assigned a specific task. One was usually asked to take notes, two were placed at far corners of the room to determine whether the talk was audible and the slides or diagrams clearly visible, one was to pay particular attention to distracting or annoying mannerisms or attitudes of the speaker and speed of presentation, one to note whether the speaker's use of English was correct and precise and two to evaluate whether the material was presented in some logical order and the goal of the presentation achieved.

At the end of the 15-minute period the speaker was given the recording and asked to listen to it critically in another room. While he was doing this, the audience discussed the talk fully and summarized both the good and bad aspects. The speaker then returned to the room and was asked to give his own criticisms first. These were followed by the presentation of the reactions, comments, praise or criticism of the audience.

Points of disagreement between the speakers and the audience could usu-

ally be resolved by a play-back of the recording. The group as a whole then agreed upon the important aspects in which the speaker needed improvement. These were written down so that they were available at the next performance of that particular member of the group, in order to evaluate his progress.

In my opinion, it is very important for the success of the venture that individuals *volunteer* for this plan and that each member be "lecturer" in turn; if the chairman of a department is a member of the group, he must be a working member and preferably give the first presentation. The chief advantage of the group system is that no one member of the faculty sets himself up as an authority or expert in teaching. I have noted that the criticism of the audience, always being a group opinion, is invariably accepted by the lecturer, whereas, in my past experience, the opinion of a single individual is often rejected as representing a prejudiced point of view. Another advantage of the group system is that, since each member of the audience will eventually be the lecturer, the criticisms offered are thoughtful ones.

I have no objective way of evaluating the success of this plan, but it is my general impression that it has hastened the development of lecturing ability in a number of those who have participated. Emphasis is not placed wholly on elocution and no attempt is made to train a mediocre speaker to be a brilliant orator. Instead, stress is laid upon logical presentation, careful time allotment, the ability of the lecturer to estimate the level of the audience, and upon the many details of presentation which make a lecture more effective.

The chief disadvantages of the system are that (1) it is directed only

toward improving a teacher's ability to lecture and not to conduct a conference or to direct laboratory work; (2) it cannot help those who choose not to volunteer; (3) the conditions under which the lecture is given may place some of the lecturers under a psychological handicap and (4) it may make an individual unduly sensitive regarding his deficiencies or mannerisms, so that his performance may at least temporarily become

worse. This last point is not serious because a group composed of working members is usually a sympathetic group which avoids harsh comments.

No single method of teaching teachers will be successful in all circumstances. The method described is a simple one, requires no "experts" and may be worthy of more extensive trial in those medical communities dedicated to the improvement of medical teaching.

#### COMMISSIONS AND LIABILITY FOR SERVICE

The National Advisory Committee to Selective Service has announced that due to the requirements of the military services for physicians between July 1, 1954 and June 30, 1955, those physicians having obligations for military service in Priority I, Priority II and that portion of Priority III born after August 30, 1922, probably will be called to duty. The only exceptions are those cases of individual physicians who occupy positions that have been declared essential in medical practice in remote communities or physicians who hold essential positions on medical faculties.

Because of new processing regulations, it will take much longer to issue commissions after applications are filed than has been the case in recent months. Therefore, it is urged that every effort be made to have those physicians who will finish internships and residencies by July 1 apply at once for commissions so that there will not be a protracted waiting period between the end of the hospital year and the call to active duty.

# Editorials and Comments

---

## Our Obligation to World Medicine

**I**N THE EARLY YEARS of the century and up until 1939 Europe was the medical center to which physicians of all countries flocked for their advanced work. The end of World War II, however, marked the end of that era.

Two wars, plus the bigotry and purging of the Hitler regime, had decimated medical faculties and reduced seriously the potential for medical research and advance in the European medical schools. The medical schools of the United States, however, had undergone the reorganization and reformation sparked by the Flexner report of 1910, and were in a period of rapid growth and scientific development which even the two world wars failed to retard seriously.

As the inevitable result of this combination of circumstances, the United States has found itself since 1946 the mecca for students of all nationalities seeking advanced work in medicine. It is essential, therefore, that we analyze this new situation and determine what obligations must be met if the United States is to live up to this new and important responsibility.

Should we bend our efforts chiefly toward expanding our medical schools to accommodate large numbers of foreign-born undergraduate medical students? The answer to this question is no. United States medical schools are finding it difficult to expand faculty and facilities fast enough to meet the needs of American students. And even if many places for foreign students were developed in our undergraduate medical colleges, it is very likely that such prolonged study and stay would result in marriage and settlement in this country and a very small return of students at completion of their studies to their country of origin. That the majority of our admission committees are of this opinion is evidenced by the medical college admission figures for the fall of 1953.<sup>1</sup> Of 60 Canadian applicants, 12 were accepted; of 224 applicants from other foreign countries, 72 were accepted.<sup>1</sup>

Should we relax our licensure laws so that foreign physicians might freely have the experience of independent practice in this country and then return to their native country? The answer to this is obviously no. Every effort should, of course, be made to provide placement for capable foreign physicians displaced through no fault of their own, and more than 1,700 such physicians have been resettled in the U. S. since 1945.<sup>2</sup> Since 1930 more than 9,700 foreign-born physicians have passed examination for licensure to practice in this country.<sup>3</sup> But there are two sound reasons why our licensure laws should not be relaxed: first, our population needs and expects protection against unqualified practitioners of medicine whether foreign-born or native-born; second, few foreign physicians after licensure and independent practice in this country will return to their native countries, with the result that the United States with one physician to each 750 of its population will be in the position of taking physicians from countries with only one physician to each 1,100 to 1,500 of its population.

Should we encourage foreign-born physicians, with their undergraduate training behind them, to come to the United States for advanced medical training in the form of teaching fellowships? The answer to this is definitely yes. This we can do without reducing the educational opportunities for our

native students, without loss of protection of our population against unqualified practitioners and with advantage to the foreign physician and the country from which he comes.

Providing that we can properly assure ourselves that the applicants are bona fide graduates of medical schools listed in the World Health Organization's "Directory of Medical Schools;" that they are desirous of obtaining advanced medical training and then returning to their native country to practice, and providing our hospitals can develop effective placement and supersensory procedures, this would appear to be by far the most promising way in which the United States can meet its obligations to world medicine.

Even this effort, however, may result in disappointment rather than fulfillment if foreign physicians are not helped to choose wisely from among the many internships, assistant residencies and residencies available. A foreign physician, who goes to expense and trouble to come to this country for advanced training and then finds that the hospital of his choice is giving him a great deal of routine ward work but very little in the way of actual instruction, will certainly be disappointed and resentful, and rightly so, since the primary objective in all such positions is education not service.

Certainly, student visas should be given only to those foreign physicians going to United States hospitals approved for internship or residency training. Of the 11,006 internships in the 856 approved hospitals and the 22,763 assistant residencies, residencies and fellowships in the 1,159 hospitals approved for such training in 1953-54,<sup>1</sup> it is estimated that about 1,800 of the internships and about 3,700 of the residencies are filled with foreign-born male physicians making up about 24 per cent of the male incumbents of the internships and about 21 per cent of the male incumbents of the residencies. This represents a medical educational operation of considerable size involving important international relations. It is the obligation of our medical schools and hospitals and of our medical profession to see that it is carefully planned and carried out in a way that is satisfactory for all concerned. Certainly it must be so managed as to insure the return of the great majority of these thousands of foreign physicians with increased knowledge and skills to their native lands, where they are so badly needed.—D.F.S.

1. John M. Stalnaker: "The Study of Applicants for Admission to U. S. Medical Colleges—Class Entering in 1953-54," *Journ. Med. Edu.*, Vol. 29, No. 4, April 1954.

2. Figures given by Dr. Alex M. Burgess, president of National Committee for Resettlement of Foreign Physicians, at a meeting of Committee on Evaluation of Foreign Medical Credentials, April 30, 1954, in Washington, D. C.

3. Donald G. Anderson, M.D., and Anne Tipner: "Medical Licensure Statistics for 1952," *J.A.M.A.*, Vol. 152, No. 5, May 30, 1953.

4. Edward H. Leveroos, M.D. and Warren R. Von Ehren: "Approved Internships and Residencies in the United States," *J.A.M.A.*, Vol. 153, No. 4, September 26, 1953.

## The Supply of Basic Science Teachers

IT IS COMMON KNOWLEDGE that career basic science teachers in our medical schools have been in short supply for many years, but particularly since World War II. Manlove, Anderson and Tipner report,<sup>1</sup> for example, that for the present academic year 1953-54 there are 47 new and 73 budgeted unfilled full-time positions in the preclinical departments of our 79 medical schools and Hinsey<sup>2</sup> in 1950 called attention to the high proportion of medical teachers of senior rank who are over 60 years of age and will require replacement in a few years.

A report recently made by Frank Bowles<sup>3</sup> on the future supply of scientists gives definite hope that relief for this shortage is in sight.

Defining the future as 20 years and a scientist as "one qualified to practice as a professional scientist by virtue of the possession of a Ph.D. in one of seven fields: physics, chemistry, biology, mathematics, geology, astronomy and psychology," he presents some very encouraging figures. In 1951-52 the figures were as follows: there were 2,114,000 in the 18-year-old age group. Of these 1,186,000 graduated from high school, 436,000 entered college, 265,000 will graduate from college, 5,300-6,000 of them will receive doctorate degrees. In 1969-70 the increases all along the line will be staggering. There will be 3,364,000 in the 18-year-old age group. Of this group, 2,583,000 will graduate from high school, 912,000 will enter college, 656,000 will graduate from college and 16,000 will receive Ph.D. degrees if present trends continue.

Though there will be a marked increase in the number of the age group, even more important will be the percentage increase in high school graduation, college attendance and graduate school attendance. As early as 1957 a production of 6,000 Ph.D.'s is expected. It is further estimated that about 55 per cent of all Ph.D.'s granted are in one of the seven science fields. Therefore, in 1957 there will likely be turned out 3,300 scientists and in 1975, 8,000 scientists.

Dr. Bowles points out that these prognostications are based upon trends as now identified and there are many factors that modify these trends. It is possible that our higher educational system will fail to adjust itself to accommodate the greatly increased number of science students. The demands of the engineering profession may reduce the number of the potential doctoral candidates.

Admitting that all such prognostications are fraught with many uncertainties it would at least appear likely that our medical schools will have larger numbers of qualified students who wish to prepare themselves for a career in teaching and research in the basic medical sciences. If we are to make the best use of this golden opportunity we must be prepared to provide the increased graduate training facilities that will be needed.—D.F.S.

---

1. Francis R. Manlove, M.D., Donald G. Anderson, M. D. and Anne Tipner: "Medical Education in the United States and Canada," *J.A.M.A.*, Vol. 53, No. 2, September 12, 1953.

2. Joseph C. Hinsey: "Maintenance of a Continuing Supply of New Faculty Members," *Journ. Assn. Am. Med. Coll.*, Vol. 25, No. 6, November 1950.

3. Frank Bowles, Director, College Entrance Examination Board: "The Future Supply of Scientists," *Educ. Record*, Vol. 35, No. 2, April 1954.



# NEWS DIGEST

---

## **Runyon Fund Allocations**

Cancer research grants to eight institutions and 23 fellows, reaching a new high, were made during April by the Damon Runyon Memorial Fund for Cancer Research.

The April allocations, totaling \$234,032, brought such grants by the Runyon fund to a grand total of \$7,852,318, distributed in 432 grants and 276 fellowships, in 175 institutions in 48 states, the District of Columbia and 15 foreign countries.

## **Blakeslee Award**

The American Heart Association announced recently that the Howard W. Blakeslee award for outstanding scientific reporting in the field of heart and blood vessel diseases will be divided into several awards to cover specific categories of newspapers, magazines, radio and television, instead of the single award established last year. The exact number of awards and the categories from which the winners will be selected by the judges are to be determined later.

It was also announced that presentation of the 1954 awards has been deferred until the combined meeting of the second world congress of cardiology and the 27th scientific sessions of the American Heart Association, to be held September 12-17 in Washington, D. C. The Blakeslee award originally was scheduled for presentation at the association's annual meeting this spring.

## **Commission Applications**

Physicians completing their internship in 1954 and dental students graduating in 1954 are advised by Dr. Frank B. Berry, assistant secretary of

defense (health and medicine), to apply for a commission in one of the military departments before the end of their internship or before graduation from dental school.

Applications will be considered by the three military departments, and by the Navy and Air Force for physicians who desire active duty prior to September 1954. Those desiring active duty after September 1954 may submit applications to any of the three military departments.

Dr. Berry emphasized that applications for commissions should be made as early as possible to assure consideration being given to making the applicant's call to active duty coincide with completion of his internship or dental education.

Dr. Berry pointed out that if his application was not submitted until the completion of internship, or graduation from dental school, the individual probably would be faced with waiting a period of from two to 12 months prior to call, during which time he might not have any productive employment.

## **School of Aviation Medicine**

Brig. Gen. Harold H. Twitchell, director of professional services in the office of the Air Force Surgeon General, addressed a class of 35 medical officers on their graduation from the School of Aviation Medicine, April 29, at Randolph Field, Texas. Among the surgeons completing the primary course in aeromedical procedures is Col. Duk Seung Chang, surgeon general of the Republic of Korea Air Force. Though officers of 38 foreign countries have taken the course in recent years, Colonel Chang is the first to enroll in it after his appointment as surgeon general.

### **New Alpha Epsilon Delta Chapter**

The Rhode Island Alpha chapter of Alpha Epsilon Delta, the national premedical honor society, was installed at Providence recently. Charter members of the chapter included 24 students and six faculty members.

### **Industrial Medical Association**

Physicians in industry, representatives of management and of labor met for the first time at the Industrial Medical Association convention, April 27-30 in Chicago.

The aim of the conference was to determine ways and means of eliminating "some of the mystery of the industrial physicians' work," according to Dr. R. C. Page, general medical director of Jersey Standard and the president-elect of the association.

### **Medical Schools Section, ACPRA**

The Medical Schools Section of the American College Public Relations Association will be held at the Hotel Roosevelt, New York City, on June 21-23.

Panel discussions will be held on "Public Relations Problems and Activities in Our Medical Schools;" "Medical School Publications;" "Lessons Learned from the Handling of Big Stories in Medicine and Science, 1953-54," and "Medical School Fund Raising and Development."

Dr. John L. Caughey Jr., associate dean, Western Reserve University school of medicine and chairman, Committee on Public Information, Association of American Medical Colleges, and Dr. Dean F. Smiley, secretary of the AAMC and editor of the *Journal of Medical Education*, will participate in the first discussion.

### **Commonwealth Fund**

Dr. John C. Eberhart joined the staff of the Commonwealth Fund as executive associate on March 15. He succeeds Mildred C. Scoville, who has retired after 30 years of work in the development of child guidance and psychiatric programs, professional education and the integrating

of psychiatry in medicine and public health.

Dr. Eberhart was formerly an officer of the Public Health Service, and during the past five years has been chief of the research grants and fellowships branch of the National Institute of Mental Health.

### **Credit for AMA Section Meeting**

Reserve retirement point credits may be earned by Reserve Medical Corps officers on inactive duty who attend the sessions of the section on military medicine during the annual meeting of the American Medical Association, June 23-25, in San Francisco.

This authorization covers eligible physicians who are medical corps officers of the U. S. Army, Navy and Air Force reserves. Point credits will be awarded eligible reserve officers on the basis of one for each day of attendance, provided sessions attended total more than two hours.

### **Japan Medical Congress**

The Japan Medical Congress will hold its 14th session in Kyoto, Japan, April 1-5, 1955. The congress, which is to be held every four years, hopes to attract men from all branches of medical science to compare medical progress in various countries.

### **Army Hospital Training**

For six weeks during the summer, three Army hospitals will be hosts to 45 junior and senior medical students. They are Walter Reed Army Hospital, Washington, D. C.; Letterman Army Hospital, San Francisco; and Fitzsimons Army Hospital, Denver.

The students will familiarize themselves with the standards of military medicine as practiced in the Army hospitals and, in addition, receive instruction in internal medicine, surgery and their subspecialties. Forty hours per week will be devoted to curricular activities. Participating students will be carried on a "student-employee" status under Civil Service. Selected medical schools within the geographical areas of the

hospitals have been requested to nominate principal and alternate students for voluntary participation in the program.

### **Lutheran Scholarship Fund**

The Lutheran Church, Missouri Synod, has recently made available to the Lutheran Medical Mission Association an undisclosed amount of money to be used as a scholarship fund for communicant members of the church who are now attending medical schools in this country and who may be interested on graduation in a career of service in the foreign mission field.

### **Proctology Awards**

The International Academy of Proctology will present gold, silver and bronze awards and certificates to the "three most outstanding world proctologists" each year beginning with the 1955 annual meeting.

The academy also voted three-year fellowships in coloproctology worth \$1,000, \$900 and \$800 apiece, to be given annually to three outstanding medical institutions.

### **Army Internships**

Final selection of 150 senior medical students in Army hospitals has been completed, according to an announcement by Maj. Gen. Silas B. Hays, Acting Surgeon General of the Army.

Representing one Canadian, one Puerto Rican and 49 American medical schools, the students will be commissioned upon graduation and on July 1 will be called into active duty as first lieutenants in the medical corps of the United States Army Reserve. Upon completion of the 12-month internship they may choose to continue in the Army or return to civilian life unless they have obligations under the doctor draft law, in which case they must satisfy those obligations.

Each of the 150 will serve a rotating internship, spending four months in surgical service, four in medical services, two in obstetrics and gynecology,

one in psychiatry and neurology and one in any of the following electives: laboratory, ophthalmology, otolaryngology or physical medicine.

Twenty-two of the interns will serve at Brooks Army Hospital, Fort Sam Houston, Texas; 16 at Fitzsimons Army Hospital, Denver; 17 at Letterman Army Hospital, San Francisco; 16 at Madigan Army Hospital, Tacoma; 22 at Tripler Army Hospital, Moanalua, Oahu, T. H.; 13 at Valley Forge Army Hospital, Phoenixville, Pa.; 22 at Walter Reed Army Hospital, Washington and 22 at William Beaumont Army Hospital, Fort Bliss, El Paso.

### **Haiti Health Problem**

Yaws, the tropical disease that until 1950 affected approximately one-third of the rural population of Haiti, reaching 50 per cent of the inhabitants in some areas, has been all but conquered by the Haitian government in cooperation with the Pan-American Sanitary Bureau, Regional Office of the World Health Organization and with financial assistance from the United Nations Children's Fund. Crews of Haitians were recruited into teams to cover the whole republic, district by district, with house to house visits.

### **National Tuberculosis Association**

The 50th anniversary meeting of the National Tuberculosis Association was held on May 17-21, in Atlantic City. The meeting was under the joint auspices of the medical section of the association, the American Trudeau Society and the National Conference of Tuberculosis Workers.

Scientists from Europe, Asia, South America and Canada met with American health workers in a week of special sessions arranged according to medical, community action, nursing and general interests. More than 80 exhibits were on display.

The Will Ross Medal was awarded posthumously to Leigh Mitchell Hodges, who died early in April. Mr.

Hodges was a columnist on the Philadelphia *North American* when the first Christmas seal sale was held in this country in 1904, and played an important part in its success.

#### **Student AMA Elects**

The fourth annual convention of the Student American Medical Association was held May 1-3 in Chicago.

John A. Oates Jr., a sophomore at the Bowman-Gray School of Medicine of Wake Forest College, was elected president. Other officers are: Daniel Heffernan, vice president; Donald C. Overstreet, treasurer, and Russell F. Staudacher, executive secretary (re-elected).

The executive council was also selected at this meeting, and includes a student each from Nebraska, Wisconsin, Marquette, Boston, Medical College of Virginia, Minnesota and Oklahoma.

#### **Accreditation Commission**

Dr. Kenneth B. Babcock has been appointed director of the Joint Commission on Accreditation of Hospitals. He was formerly director of the Grace Hospital, Detroit. Dr. Babcock suc-

ceeds Dr. Edwin L. Crosby, newly appointed executive director of the American Hospital Association.

#### **College Film Exchange**

The Medical Audio-Visual Institute of the AAMC has taken the first step toward a medical college film exchange by asking the medical colleges of the United States for information on film materials they have produced. A significant number of films and filmstrips have been made by individual schools for report, research or teaching purposes.

Plans call for the collection and cataloging of these materials by the institute. They will then be available to all the medical schools for research and teaching purposes. In addition to facilitating a free interchange of materials, the exchange will provide a source of information on what has been filmed, and thus prevent unintentional duplication of film material.

Film information forms may be obtained from the medical audiovisual coordinator in each school, or by writing the Medical Audio-Visual Institute, 185 N. Wabash Ave., Chicago 1, Ill.

## **College Briefs**

---

### **Albany**

Dr. GERALD S. KANTER, department of physiology, has received for the second consecutive year a research grant from the U. S. Air Force. Both grants total \$13,500.

Dr. Kanter is studying the effects of heat on the occupants of a plane traveling at high speed. He has been experimenting with animals and humans to discover what results high temperature has upon kidney function and body chemical regulation, and he is now engaged in work with controls aimed at preventing heat dehydration and heat stroke.

### **Boston**

Dr. SANFORD B. HOOKER, professor emeritus of immunology, received the school of medicine alumni association's first "distinguished service" scroll at the annual meeting on May 1.

Dr. Hooker taught at the university for nearly 40 years, prior to his retirement last year.

### **Chicago Medical**

New appointments to the faculty include Dr. EUGENE I. FALSTEIN, clinical professor of psychiatry, and Dr. EMANUEL E. MANDEL, associate professor of medicine.

Faculty advancement in rank was given to Dr. LEON H. STRONG, who becomes professor of gross anatomy; Dr. HANS ELIAS, associate professor of microscopic anatomy; Dr. HAROLD KOENIG, associate professor of neuro-anatomy and Dr. KURT STERN, associate professor of pathology.

#### **Dalhousie**

The faculty of medicine has decided to increase its entrance requirements from two to three years of premedical work. This action will come into effect with the entering class in medicine in 1956 and will thus apply to students starting their premedical work in 1954.

For the past few years Dalhousie has been practically alone in admitting students into the medical school with two years of college education. Since 1951 the American Medical Association and the Association of American Medical Colleges have required three years of college training and recommend four in order that the students may receive a broad general education before entering medicine.

#### **Duke**

The virus research team headed by Dr. JOSEPH W. BEARD, professor of experimental surgery, has been awarded a \$10,000 Damon Runyon Memorial Fund grant for cancer research.

The grant will help support a project on leukosis in chickens, and will be used to keep in operation a electronmicroscope in counting virus particles. The check for the grant was presented by DAN C. GUNTER JR., chairman of the North Carolina membership council of the Fraternal Order of Eagles.

#### **Georgetown**

Dr. WILLIAM PARSON, professor and director of the department of medicine, University of Virginia School of Medicine, served as professor of medicine pro tem at the school of medicine during the week of April 26-May 1.

Dr. Parson's appointment as a pro tem professor continues an annual custom of four years' standing whereby outstanding teachers and physicians from other medical schools are invited to serve for a short time at the school of medicine for the purpose of broadening the educational outlook for students and doctors at the medical center.

Prior to assuming directorship of the department of medicine at Virginia in 1949, Dr. Parson was assistant professor of medicine at Tulane University. His field of special interest is in endocrinology and metabolic diseases.

Dr. HERBERT SPENCER GASSER, Nobel prize winner and director of the Rockefeller Institute, has been awarded the Kober Medal for 1954. The medal is awarded annually by the Kober Foundation at Georgetown to a member of the Association of American Physicians who has contributed to the progress and achievement of the medical sciences or the medical profession.

Dr. Gasser, who has been the director of the Rockefeller Institute since 1935, was awarded one-half of the 1944 Nobel Prize in physiology and medicine for his researches on the differentiated functions of single nerve fibers.

The award of the Kober medal is provided for by a \$16,000 endowment fund established in 1923 by Dr. GEORGE M. KOBER to commemorate the 50th anniversary of his graduation in medicine from Georgetown. The fund also pays the expenses of an annual lecture, a scholarship in the Georgetown Medical School, and a gold medal to be awarded to the best student in hygiene.

#### **George Washington**

Two grants, totaling \$19,465, have been awarded to George Washington University scientists for the study of organisms involved in the resistance to, and recovery from, intestinal infections, such as shigellosis, a form of dysentery which often causes trouble on Navy ships.



One grant for \$10,000 was given by the U. S. Office of Naval Research, while the other for \$9,465, was awarded by the National Institutes of Health of the Public Health Service. The research provided for by these grants will be carried out under the direction of Dr. LELAND W. PARR, professor of bacteriology and Dr. MARY LOUISE ROBBINS, associate professor of bacteriology.

### **Illinois**

Out of 146 seniors in the college of medicine who participated in the matching plan for hospital internships, 133 received their first preference.

In addition to those who were matched to the hospital of their choice, 11 students received their second preference. Only two students were not matched, and they expect to be located soon.

Cook County Hospital was the most common choice of the students, and 46 seniors will intern there. Nine students will intern at the University Research and Educational Hospitals. Students are matched for internships through the National Intern Matching Program.

Mrs. CAROL COOLEY has been appointed head of the department of medical social work, effective July 20, 1954. At the present time, Mrs. Cooley is associate executive secretary of the health division of the Welfare Council of Metropolitan Chicago. The department of medical social work provides instruction to students in the college of medicine, students in the school of social work who are specializing in the field of medical social service, students in occupational therapy and students in the school of nursing.

### **Indiana**

The 7th annual alumni day of the school of medicine was held on May 7. Guest speakers included Dr. FRANK G. DICKINSON, director of the American Medical Association's bureau of medical economic research; Dr. ROBERT A. MOORE, vice chancellor-elect of the schools of the health pro-

fessions, University of Pittsburgh, and Dr. JOHN D. VANNUYS, dean of the medical school.

The day's activities included limited attendance clinics, campus tours, an alumni business meeting and the traditional fried chicken and strawberry shortcake picnic.

Dr. EMILE HOLMAN, professor and chairman of the department of surgery, Stanford University, was appointed George A. Ball visiting professor in surgery. He spent the week of May 10 on the campus for a series of lectures, ward rounds and clinics.

### **Jefferson**

The entire student body attended American Medical Association Day on May 5. This day, the first of its kind in this country, was arranged by the Jefferson chapter of the Student American Medical Association.

The class of 1954 recently presented to the college a portrait of Dr. LEWIS C. SCHEFFEY, professor and head of the department of obstetrics and gynecology, commemorating his accomplishments since his graduation in 1920.

### **Marquette**

A five-day program, highlighted by a conference on hemorrhagic diseases, marked the formal opening and dedication of the new EBEN J. and HELENE M. CAREY memorial library addition to the school of medicine.

The \$1,100,000 addition is named in honor of the late Dr. Carey, who was dean of the school, and the late Mrs. Carey.

In addition to American physicians, Dr. TAGE ASTRUP of the Carlsberg Foundation, Copenhagen, Denmark, and Dr. ALFREDO PAVLOVSKY of the Naval Hospital, Buenos Aires, Argentina, will attend the hemorrhagic conference.

### **Medical Evangelists**

The U. S. Armed Forces have awarded a new contract to the school of tropical and preventive medicine's department of herpetology and ichthyology for the further investigation



of their poisonous fish project. The contract, for \$49,740, started April 1.

### **Michigan**

In the event of atomic warfare, the university's medical facilities would be increased six-fold. The university hospital has worked out a joint plan with Civil Defense officials to make emergency changes which would permit the treatment and hospitalization of 6,000 casualties.

Should an attack come, university officials have approved emergency use of three dormitories which lie directly south of the hospital.

The defense plan calls for a screening of casualties at points of evacuation. When they arrive in Ann Arbor, all victims of radiation burns would be sent to one dormitory. Those suffering other forms of radiation sickness would be hospitalized in another and patients requiring general observation would be sent to the third.

Dr. ROBERT C. GESELL, chairman of the department of physiology since 1923, died on April 19, at the age of 68.

Dr. HOWARD B. LEWIS, 67, chairman of the department of biological chemistry for 32 years, died on March 7 after a long illness.

The Kresge medical research building was dedicated on May 15. The building is a gift of the S. S. Kresge Foundation, dedicated to research in medicine and related fields and to the training of investigators in the basic and applied medical sciences. The basic cost of the building was \$3,500,000.

### **Minnesota**

Dr. HAROLD S. DIEHL, dean of the medical school, served as one of three United States delegates to the 1954 Congress of the World Health Organization, which was held May 4-22 in Geneva, Switzerland. Other U. S. delegates were Dr. LEONARD SCHEELE, surgeon general of the Public Health Service, and Dr. CHESTER KEEFER, assistant secretary for health affairs in the Department of Health, Education and Welfare.

### **State U. of N. Y.-Brooklyn**

The college of medicine and the Kings County Hospital were hosts on April 23-24 to 60 neurosurgeons of the United States and Canada at the 45th annual meeting of the Society of Neurological Surgeons.

A new pediatrics research laboratory, with equipment largely provided by the Junior League of Brooklyn, was opened recently. The pediatrics department is undertaking five new research projects this year, on diseases of the kidney, oxygen therapy and retrolental fibroplasia, physiology of the newborn's breath, the critical first three days and brain injuries from bilirubin and other pigments.

### **N.Y.U.-Bellevue**

Dr. DONALD A. COVALT, associate director of the institute of physical medicine and rehabilitation, recently left for Cairo, Egypt, for a period of two weeks. He will work with the Egyptian ministry in developing an appropriate center for the rehabilitation of paralytic poliomyelitis cases.

Dr. Covalt's services were made available by the United States Foreign Operations Administration at the request of Dr. NUR EL DIN TARRAS, Egyptian minister of health. Before returning to the United States, Dr. Covalt will visit medical schools in Beirut, Lebanon, and Madrid, Spain.

A course in "Medical Testimony in Malpractice and Negligence Cases for Practitioners of Medicine, Law and Allied Professions," will be given for the first time by the postgraduate medical school in cooperation with the school of law.

The course will be held weekly from October 7 to March 10 under the direction of MAXWELL H. POPPEL, professor and chairman of the department of radiology. Mock trials, question-and-answer periods and other practical features simulating actual court conditions will be presented.

### **Oregon**

The alumni association held its 39th

annual meeting on April 21-23, meeting jointly with the Oregon chapter of the American Academy of General Practice and the Sommer memorial lecture series.

Nearly a dozen doctors, representing various specialties as well as general practice, will contribute to the three-day scientific sessions.

Dr. ARTHUR J. SEAMAN, associate professor of experimental medicine, has been awarded a Fulbright fellowship for a year's study and research at the University of Oslo, Norway. He will study under Dr. PAUL OWREN, professor of medicine at the Norwegian university, and will work on a project on blood coagulation, particularly the body mechanism which initiates blood clotting. He will also attend the fifth international congress of the International Society of Hematology at the Sorbonne, Paris, on September 6-12.

Dr. WILLIAM B. HOLDEN, 81, professor emeritus of surgery and Portland's oldest practicing surgeon, was honored at a banquet in April by the staff of Portland Sanitarium and other doctors. Dr. Holden was a member of the faculty from 1915 until 1947.

A Public Health Service grant of \$55,600 has been received through the National Advisory Cancer Council. The funds will be used by Dr. E. E. OSGOOD, professor and head of the division of experimental medicine, in his study of the leukemias and allied diseases.

### **Pennsylvania**

A statewide campaign against alcoholism, being waged under the auspices of the state department of health, division of alcoholic studies and rehabilitation, was opened recently with a two-day public forum at the university.

The university's part in the project is in two phases. Under a commonwealth grant, medical research programs are currently being organized under the direction of Dr. WILLIAM C. STADIE, chairman of the department of research medicine. Public forums are also to be held, under the

direction of Dr. JOHN P. HUBBARD, chairman of the department of public health and preventive medicine.

### **Rochester**

Dr. LEONARD D. FENNINGER, chief of the section on general medicine of the National Cancer Institute, has been appointed assistant dean and assistant professor of medicine of the school of medicine and dentistry. Dr. Fenninger was a 1943 graduate in medicine from the university.

### **Tennessee**

Dr. JAMES ROBERT TEABEAUT, head of the forensic pathology section of the Armed Forces Institute of Pathology, Washington, D. C., will join the staff of the college of medicine on September 1 as assistant professor in the division of pathology and bacteriology. His employment is made possible by the Lederle faculty award.

### **Southwestern**

A U.S. Army contract reimbursable to a maximum of \$18,440 has been received for research on the factors responsible for the toxic and lethal effects of bacterial endotoxins, with Dr. A. I. BRAUDE, associate professor of internal medicine, as principal investigator.

### **Wayne**

The university recently became the first American university to establish a department of industrial medicine and officials stated that such training will become a part of the education of every Wayne medical student.

Dr. ARTHUR J. VORWALD, formerly director of the Edward L. Trudeau Foundation, will head the new department, which is an outgrowth of a program of instruction in industrial medicine given to senior medical students for the past two years with the cooperation of the Industrial Physicians Club of Detroit. The aims of the department, according to Dr. Vorwald, are research, especially on preventive measures, instruction on graduate and undergraduate levels and general community service.

# Audiovisual News

## Fracture Film Appraised by Schools

The film, "Principles of Fracture Reduction" (See Journal of MEDICAL EDUCATION review, June 1953), has recently completed the preview circuits for medical colleges. The purpose of the circuits is to provide an opportunity for key faculty members to see preselected AV materials with a view to future instructional use.

The following information is taken from 102 appraisal forms returned to date by the 76 medical colleges on the circuits. A total of 375 faculty members, 40 residents and 1,713 students were reported as having seen the film. The film was given the following "overall" appraisal ratings: poor, 1; fair, 15; good 44; excellent, 37; no indication, 5.

The appraisers thought the film best suited for the following audiences: medical students, 85; interns and residents, 40; postgraduates, 16; others, 15.

In answer to: "Should this film be a part of your college library?", 40 of the appraisal forms said "yes," while 39 said "no," with 23 giving no indication.

"Is this a film you will want to rent from time to time?" "Yes," said 45 of the appraisal forms, while 24 said "no," with 33 giving no indication. For clarity it should be pointed out that many previewers who indicated that the film should be a part of the college library also said that they would want to rent it from time to time, presumably because they would not be able to purchase it even though such purchase would be desirable. The large number that gave no indication may be explained by the fact that many considered an answer to one of the questions automatically made the other question invalid.

Many comments were given on both the strengths and weaknesses of the film. Representative of the "strengths" are: "Well photographed, narrated and organized;" "First portion shows very well the principles of fracture reduction;" "Subject matter was limited sufficiently to put the main ideas across;" "Very good review of basic principles;" and "Should welcome the opportunity of projecting this film to junior class once yearly."

The chief criticisms were levelled at the portion of the film showing farmhouse emergency fracture handling to demonstrate the principles. The following comments are representative: "Last half (doctor at farmhouse) had faulty, impractical and wrong implication;" "Stress was too much on emergency treatment;" and "The film would be strengthened somewhat if more attention was given to the methods of fracture immobilization for transportation."

**Distribution:** Sales: United World Films, Inc., 1445 Park Ave., New York 29, N. Y.

**Loans:** Central Office Film Library, Veterans Administration, Vermont Ave. & H. St., N. E., Washington, D. C. **Rentals:** Medical Audio-Visual Institute, 185 North Wabash Ave., Chicago 1, Ill. \$7 for one week.

Reporting on college reactions to preview circuits material will be a regular part of this section. Next month the reactions to "The Lymphatic System" will be summarized.

## Summaries of Film Reviews

### Trichomonal and Monilial Vaginitis

19 min., sd., color, 16 mm. (revised 1951).

After a historical introduction concerning the discovery of *Trichomonas vaginalis*, the four principal life changes in the vaginal epithelium and vaginal pH are charted. The anatomical and physiological changes during vaginal infections are discussed. Material on the general incidence and symptomatology of vaginitis is followed by specific clinical contrasts of moniliasis, senile vaginitis and trichomoniasis. Laboratory diagnosis is demonstrated. The principles of therapy are described. Floraquin for trichomoniasis and gentian violet for moniliasis are advocated, to be used in association with management of associated pathology.

This film is a summary medical article heard from the soundtrack and a series of disjointed illustrations on the screen. Together they cover broad and necessarily sketchy considerations of the differential diagnosis and treatment of two contrasting types of vaginitis. Floraquin is advocated for therapy of trichomoniasis without adequate reference to other

# THE ANSWER IS IN THE ZERO!



YOU can always be sure a TYCOS\* Pocket Aneroid is accurate as long as the pointer returns *within zero*. This easy visual check can be made after every reading. And, this Pocket Aneroid can be used *in any position*. Weighing only 19 ounces, it is ideal for house calls. Fits in a zipper case that can easily be slipped into your pocket or your bag. The

exclusive hook cuff is designed to fit any adult-sized arm and cannot balloon at the edges. Our 10-Year Warranty allows free readjustments . . . even if you drop it. See this instrument at your favorite surgical supply dealer. Price **\$42.50**. Made by Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.

\*Reg. U. S. Pat. Off.

***Taylor Instruments* MEAN ACCURACY FIRST**

agents, and there are a number of pertinent criticisms of fact and method. Production skills are relatively inept in all aspects, but particularly unhappy in direction are the reenactments and live action shots.

As an introduction or review of the subject, and despite its real weaknesses of presentation, students and practitioners will find the film informative in its principal points of fact, but they will learn little toward diagnostic skills. A competent instructor or discussion leader can, if he chooses, readily control the material on management according to broader comparative knowledge than is presented in the film.—A.N. and D.S.R. with MAVI Panel, June 1950.

**Audience:** Practitioners, medical students.

**Production Data:** Sponsors: G. D. Searle & Co.; Scientific Advisor: J. P. Greenhill, M.D., Cook County Hospital, Chicago; Producer: Medical Film Guild, Ltd., New York.

**Distribution:** G. D. Searle & Co., P.O. Box 5110, Chicago 80, Ill., Loan.

#### **Recording Oximeters and Their Applications**

16 min., color, sd., 16 mm., 1953.

Principles of oximeters are demonstrated by means of light meter and red and blue dyes to simulate, respectively, oxygenated and reduced (cyanotic) blood. The Millikan ear oximeter is demonstrated and its limitation described. The Wood ear oximeter is also demonstrated; this provides absolute readings of oxygen saturation even in cyanotic patients. The merits of continuously recording oximeters are summarized. Instruments are shown in operation during studies on pulmonary function for diagnosis of congenital heart disease by intravenous injections of Evans blue dye, during catheterization of the heart, during valvulotomy for pulmonic stenosis with atrial septal defect ("rise in oxygen saturation shows no further cutting necessary"), during recovery from anesthesia and during convalescent oxygen therapy.

This is a research report film of new instrumentation helpful in the practical diagnosis and treatment of diseases of the lung and congenital heart disease. Much of the data assume advanced knowledge of cardiovascular and pulmonary physiology. The paucity of close-ups and the relatively low visual analysis further limit the audience, to a certain extent, to experts in the field of cardio-vascular-pulmonary disease.

For those concerned with the day-by-day diagnosis and management of congenital heart diseases of the lungs, this film points to an apparently rugged and practical instrument for recording oxygen saturation of arterial blood.—D.S.R., 1954.

**Audience:** Anesthesiologists, thoracic surgeons, internists, pediatricians.

**Reference:** "The Conversion of Millikan and Wood Type Oximeters into Direct Writing Recording Instruments for Use in Surgery," in *Studies of Pulmonary Function, and in Teaching Respiratory Physiology*, John F. Perkins Jr., U. E. Adams and Huberta Livingston. J. Lab. Clin. Med. 40, #3, Pages 457-478, September 1952.

**Production Data:** Authors: John F. Perkins Jr., M.D., and William E. Adams, M.D., departments of physiology and surgery, University of Chicago, 550 E. 59th St., Chicago 37, Ill. Producer: Tressel Studio, Chicago.

**Distribution:** Tressel Studio, 7905 S. Burnham Ave., Chicago 17, Ill., Loan.

#### **Ligation and Stripping Treatment for Varicose Veins**

21 min., sd., color, 16 mm., 1953.

A series of legs demonstrates saphenous varices as the surgeon describes the need for an "adequate examination, adequate operation for the individual case, adequate followup and treatment." In a male patient the surgeon demonstrates tests for incompetent perforating veins at the four common sites, and shows retrograde flow in the great saphenous vein of the left leg; incompetent veins are skin-marked. After surgical preparation of the leg, incision is made over the sapheno-femoral vein junction; tributary veins are dissected and ligated, the saphenous vein is cut at its point of entry and the fascia closed. Strippers are passed down the vein to the knee. After incision and vein ties the vein is stripped out, demonstrated and subcutaneous bleeding pressured. Stripping is carried downward to the ankle, making additional incisions, dissecting out the perforating veins and removing miscellaneous varices. The leg is bound in a pressure bandage after incision closures. The appearances of postoperative legs are seen and the need for sclerosing injection of small varices is discussed.

This excellent record and demonstration of a classical surgical method found effective in more than "2,200 legs" to be truly satisfactory lacks only true visual analysis of certain procedural points, some carefully interdigitated diagrams, notably of the saphenous vein systems and a narration more tightly tied to the pictures at introduction and ending.



Good surgeons may disagree as to the direction in which stripping is performed. Camera coverage is clean as far as it goes but is distinctly poorer in the legs seen in the outpatient settings. The surgeon narrator lends authenticity through the practical authority of his voice and manner.

For general surgeons the film is practical, helpful and at the least a good review. For medical students the film's use will gain by a prior anatomical orientation to the great saphenous vein and its connections, followed by competent discussion of the realistic considerations of surgery and postop followup.—*D.S.R. with MAVI Panel, February 1954.*

**Audience:** Surgeons, medical students.

**Reference:** "Ligation and Stripping Treatment for Varicose Veins." H. O. McPheeters, M.D. (Publication Pending) Surgery, Gynecology & Obstetrics, 1954.

**Production Data:** **Sponsor - Producer:** Davis & Geck, Inc.; **Authors:** H. O. McPheeters, M.D., and Clarence V. Kusz, M.D., Asbury Methodist Hospital, Minneapolis.

**Distribution:** Film Library, Davis & Geck, Inc., 1 Caspar St., Danbury, Conn., Loan.

### Cardiac Arrest

29 min., si., color, 16 mm., 1953.

A surgical team handling a patient with a right inguinal herniorrhaphy discovers that the heart has stopped. The anesthetist introduces a tracheal tube, begins oxygen and positive pressure artificial respiration; the surgeon cuts into the chest and massages the heart. In a series of dog hearts there are demonstrated the causes of cardiac standstill; hypercapnia and ventricular fibrillation of five etiologies; the proper steps to take in handling each are listed and shown. Where electrical shock fails, coronary perfusion with KC1 is done with the aorta temporarily clamped. Weakness of heart beat is strengthened by calcium. A continuous ECG recording on a patient under hypothermia with cardiac arrest demonstrates the steps taken and the heart reaction. In titles the film summarizes the actions of the anesthetist and surgeon.

This teaching film, with its acceptable reenactment of the cardiac arrest emergency in the operating room, presents a good rationale and simplification of emergency procedures while demonstrating their physiological bases. A rate of 40-60 heart compressions per minute (not "massage") is feasible for inexperienced operators; the film's recommendation of a 100 beat per minute rate re-

quires substantiating evidence. In shocking the fibrillating heart a voltage of 120-165 should be mentioned along with the amperage. The proper roles of calcium and potassium in the management of cardiac arrest cases is perhaps being elucidated by this group and others in current research. Although the film lacks a professional polish, the content organization is valid and the visual documentation is good; a restrained but pointed sound track would have been helpful, and this would have reduced the number of titles. Technical photographic qualities are good except for the jumping frame line.

For all members of the surgical team this film will motivate and teach well the essentials of handling heart standstill emergencies. Naturally, the film's optimal use will be in the hands of a competent surgeon able to prepare for the film's showing and to discuss the many points which cannot be covered in a single film unit. A magnetic sound track would be most helpful.—*D.S.R. with MAVI Panel, February 1954.*

**Audience:** Surgeons, anesthesiologists, residents, surgical nurses.

**Reference:** "Cardiac Resuscitation." J. Johnson and C. K. Kirby, Surg. Clin. N. Amer. 29: 1745, 1949.

**Production Data:** **Producer:** University of Colorado School of Medicine, Denver; **Authors:** J. Cuthbert Owens, M.D., and Henry Swan, M.D., department of surgery; **Cameramen:** Glenn E. Mills, Billie Wheeler.

**Distribution:** The authors, department of surgery, University of Colorado School of Medicine, 4200 E. Ninth Ave., Denver, Colo., **Service Charge:** \$5.

### Portacaval Shunt

23 min., sd., color, 16 mm., 1951.

In a patient with hepatic pathology and portal hypertension, a right thoracoabdominal incision at the ninth rib is made. The ninth rib is resected, the pleural space opened, the costochondral segments cut, the diaphragm incised, and the liver-stomach-duodenal area of the portal vein dissected. The retroperitoneal dissection of a segment of the inferior vena cava is carried out and the portal vein is anastomosed to the vena cava by suture technique as recommended by Blakemore. The vena caval occlusion is released and tested and the portal vein occlusal tape is released. Liver biopsy is taken. Drains for the pleural space and the vascular anastomotic site are placed preceding anatomical closure in layers.

This methodical case record film which describes a procedure for alleviation of portal hypertension is simple, clear and



full of practical comments from the surgeon-narrator. It demonstrates the wide exposure possible because of the thoracoabdominal approach which permits easier and safer procedures in this region. The fields are somewhat confused by the oozing serosanguineous and lymphatic seepage mentioned several times by the surgeon as a manifestation of the patient's disease process. The narration is sometimes dissociated from the screen, and the camera is static, but on the whole good surgical clarity is maintained.

For students of surgery this film is the competent and authentic record of a currently accepted procedure, filmed clearly enough to be understood and discussed in surgical seminars.

**Audience:** Students of surgery, surgeons.

**Reference:** The Right Thoraco-Abdominal Approach. John P. Heaney, M.D., and George H. Humphreys II, M.D. *Annals of Surgery*, Vol. 128, Pages 948-955, November 1948.

**Production Data:** Sponsor - Producer: Davis & Geck, Inc.; Author-Surgeon: John P. Heaney, M.D., department of surgery, Baylor University College of Medicine, Houston, Texas. Produced for Cine-Clinics, 1951. American College of Surgeons.

**Distribution:** Film Library, Davis & Geck, Inc., 1 Caspar St., Danbury Conn., Conn.

### Gall Stone Ileus

17 min., si., color, 16 mm., 1952.

By means of titles, animated diagrams, the etiology, incidence, mortality, pathology, signs and symptoms with X-ray findings are presented. Partial intestinal obstruction by a large gallstone is demonstrated at operation, with incision and removal. A case of impacted gallstone with bowel gangrene requires resection and anastomosis. At autopsy the cholecysto-jejunal fistula is demonstrated. Spontaneous passage of a gallstone less than 2.5 cm. is shown. After cholecystostomy the matching stones are seen; diagrams summarize the case pathology. In an autopsy demonstration of gallstone ileus with gall bladder carcinoma (and cardiac failure) the fistula is demonstrated.

This simple case atlas teaching film follows the general pattern of the other films of this surgical pathology series presenting a range of cases both at surgery and autopsy. Presentation is direct, uncomplicated, of good clarity though semi-professional. A sound track would have helped augment the teaching impact.

For medical students in their introduc-

tion to surgery, the film effectively communicates the essential syndrome and pathology of gall stone ileus. General surgeons and practitioners might find the film a helpful review. Ad lib narration by a trained instructor will heighten the teaching value.—D.S.R., 1954.

**Audience:** Medical students, practitioners.

**Production Data:** Authors: Hilger Perry Jenkins, M.D., Wolfgang Kollert, M.D., and Raymond Kjellberg, M.D., University of Illinois College of Medicine and Woodlawn Hospital; **Animated Diagrams:** Illustration Studios, University of Illinois College of Medicine.

**Distribution:** Surgical Film Library, Davis & Geck, Inc., Danbury, Conn.; **Loan:** The authors; **Sale:**

### Visual Surgery in the Open Heart During Hypothermia

25 min., sd., color, 16 mm., 1953.

A female child under anesthesia is rapidly cooled in an icewater bath to 31° C (and 23°); the dangers and precautions of hypothermia are discussed. After a wide transverse anterior opening of the chest, the heart is exposed, occlusion of the venae cavae is prepared for and the pericardium opened. The typical malformation of pulmonary valvular stenosis is noted. With blood flow controlled, an incision through the pulmonary artery permits intervention under visual control to relieve the stenosis. The heart is allowed to return to normal function with precautions designed to minimize air embolism. The pericardium and chest are closed and the patient rapidly warmed. In a Tetralogy of Fallot patient with infundibular pulmonary stenosis, the associated interventricular septal defect could not be closed after cutting and excision of the stenotic pulmonary tissue. In a third patient an interatrial septal defect is visualized and readily sewn together. The latter two cases are handled under hypothermia with wide exposure of the heart fields. Mortality statistics indicate that with at least these three specific congenital heart situations the methods demonstrated are of relatively low risk.

This film report of three typical cases of congenital heart disease is convincing documentation of the authors' methods, even though the precautions against air embolism are difficult to see clearly; however, even students of surgery would gain by having even bigger closeups, certain orientational diagrams, a mobile camera and less dissociation of narration and screen. For a sound film there



# For CONSTIPATED BABIES

Borcherdt

## MALT SOUP Extract\*

A gentle laxative modifier of milk. One or two table-  
spoonfuls in the day's formula—or in water for breast  
fed babies—produce a marked change in the stool.

### SAVES DOCTOR'S TIME, TOO!

Fewer phone calls from anxious mothers. Malt Soup  
Extract is merely added to the formula. Prompt results.  
Easy for mother to prepare and administer. Does not  
upset the baby.

\*Specially processed non-diatatic  
malt extract neutralized with po-  
tassium carbonate. In 8 oz. and 16  
oz. bottles.

Send for Samples  
and Literature

**BORCHERDT MALT EXTRACT CO.**

217 N. Wolcott Ave. • Chicago 12, Ill.



**GOOD FOR  
GRANDMA, TOO!**

Borcherdt

## MALT SOUP Extract\*

### A New Dietary Management for CONSTIPATED ELDERLY

A bowel content modifier that softens dry, hard stools by  
dietary means without side effects.\* Acts by promoting an  
abundant fermentative bacteria in the colon, thus producing  
soft, easily evacuated stools. Retards growth of putrefactive  
organisms. By maintaining a favorable intestinal flora, Malt  
Soup Extract provides corrective therapy for the colon, too!

**DOSE:** 2 tablespoonfuls b.i.d. until stools are soft  
(may take several days), then 1 or 2 Tbs. at bedtime.

\*Specially processed malt extract  
neutralized with potassium carbo-  
nate. In 8 oz. and 16 oz. bottles.

I. Cass, L. J. and Frederik, W. S.: Malt  
Soup Extract as a Bowel Content  
Modifier in Geriatric Constipation.  
Journal-Lancet, 73:414 (Oct.) 1953.

Send for  
Sample

**BORCHERDT MALT EXTRACT CO.**

217 N. Wolcott Ave. • Chicago 12, Ill.

appear to be far too many redundant titles.

Surgeons and surgical residents will find the film illuminating and instructive as an exposition of an approach and a rationale for that approach. In a field as dynamic as present-day cardiac surgery, this film should naturally be related to others of its kind in pertinent discussions.—D.S.R., February 1954.

**Audience:** Surgeons, surgical residents.

**References:** 1. "Cessation of Circulation in General Hypothermia. I. Physiologic Changes and Their Control." Henry Swan, M.D., Irvin Zeavin, M.D., Joseph H. Holmes, M.D., and Vernon Montgomery, M.S. *Annals Surg.* 138: 360, 1953. 2. "Surgery by Direct Vision in the Open Heart During Hypothermia." Henry Swan, M.D., Irvin Zeavin, M.D., and S. Gilbert Blount, M.D. *JAMA* 153: 1081, 1953.

**Production Data:** **Producers:** University of Colorado School of Medicine, Denver; **Authors:** Henry Swan, M.D., department of surgery; **Camera:** Glenn E. Mills, Billie Wheeler.

**Distribution:** Henry Swan, M.D., professor of surgery, University of Colorado, department of surgery, 4200 E. Ninth Ave., Denver, Colo.; **Service Charge:** \$5.

#### **The Extracorporeal Diversion of Systemic and Coronary Venous Blood Flow During Auriculotomy and Ventriculotomy**

12 min., sd. (magnetic), color, 16 mm., 1954.

The author's mechanical heart is seen superficially, with its battery type screen oxygenator and extracorporeal vascular system. In a dog subject the extra-corporeal blood circuit is established by cannulation of a femoral artery and both venae cavae. Through an auricular incision the AV valve is exposed, and the blood-free right heart seen; the incision is closed, circulation reestablished and the postoperative dog demonstrated in action. In a second dog heart, auriculotomy permits removal of lethal heart worms (*Dirofilaria immitis*). The post-operative dog is seen moving about normally. In a third dog heart, ventriculotomy exposes the blood-free right chambers and AV valve; the dog is seen in active life thereafter.

This report film concerns advances toward improved direct vision surgery of the heart valves and walls by means of a mechanical heart and extracorporeal blood circuits. The merits or shortcomings of the methods being developed will be established during the next years' developments in this kinetic field of surgical research. The cinematography is of reasonable clarity. The few titles are small and inadequate and the lack of good orientation assumes an instructor very familiar with the authors' work.

For surgical residents, surgeons and

physiologists the film will provide stimulating food for seminary discussions, particularly if conducted by a skilled cardiac surgeon.—D.S.R., 1954.

**Audience:** Surgeons, physiologists.

**Reference:** Miller, B. J., Gibbon, J. H., Jr., Fineberg, C. "An Improved Mechanical Heart and Lung Apparatus." *Medical Clinics of North America* 37, Number 6, November 1953.

**Production Data:** **Authors:** Bernard J. Miller, M.D., John H. Gibbon Jr., M.D., Charles Fineberg, M.D., Jefferson Medical College of Philadelphia; **Cinematography:** James Magee.

**Distribution:** The authors, department of surgery, Jefferson Medical College, 1025 Walnut St., Philadelphia, Pa. Loan.

#### **Contractions of the Valve of the Foramen Ovale of a New Born Lamb**

2½ min., si. b&w., 16 mm., 1940.

In the freshly excised heart of a newborn lamb the atrium is widely opened. The fingers of the demonstrator expose the interatrial septum with its patent foramen ovale. Spasmodic contractile movements of the atrial myocardium show the valve-like actions of the crescentic muscular septal wall flaps.

This research film fragment emanating from an illustrious research group is only a research datum and requires knowledgeable interpretation. The sheep heart is not identical with the human heart in the newborn, but is sufficiently close to be highly suggestive of valid comparisons. The dynamic pressure elements of blood-filled atria cannot be shown in this preparation and cannot readily be extrapolated in terms of human congenital heart defects. Orientation is relatively clear, and cinematography is adequate for such a film recording.

Only informed embryologists and students of congenital heart disease will be able to utilize this film as an illustration of foramen ovale structure and function, augmenting other teaching materials.—D.S.R. with MAVI Panel, February 1954.

**Audience:** Students of congenital heart disease, embryologists.

**Reference:** Barclay, A. E., Franklin, K. J., Frichard, M.M.L.: "The Fetal Circulation and Cardiovascular System, and the Changes That They Undergo at Birth." Charles H. Thomas (Blackwell Scientific Publications, Ltd., Oxford), 1945.

**Production Data:** **Authors:** Barclay, A. E., Barcroft, J., Barron, D. H., and Franklin, K. J., Physiological Laboratory and School of Anatomy, Cambridge, and the Nuffield Institute for Medical Research, Oxford.

**Distribution:** (in U. S.) Medical Audio-Visual Institute of the Association of American Medical Colleges, 155 North Wabash Ave., Chicago 1, Ill.; **Loan:** \$2.00. (in G.B.) British Film Institute, 164 Shaftesbury Ave., London W.C.2, England; **Sale:** \$5.

Announcing

# THORAZINE\*

a remarkable new drug

—remarkable because of its diverse pharmacological activity:

- controls apomorphine-induced vomiting in dogs
- produces sedation without hypnosis
- causes muscular relaxation
- interrupts conditioned reflex in rats
- potentiates analgesics, anesthetics, sedatives
- produces hypothermia

—remarkable because preliminary clinical studies have indicated its potential usefulness in:

- |                             |               |
|-----------------------------|---------------|
| • general medicine          | • surgery     |
| • obstetrics and gynecology | • dermatology |
| • neuropsychiatry           | • pediatrics  |
| • anesthesiology            | • geriatrics  |

\*Trademark for chlorpromazine hydrochloride, S.K.F. Chemically it is 10-(3-dimethylaminopropyl)-2-chlorphenothiazine hydrochloride.

Patent 2643640

## a new therapeutic agent with profound pharmacological activity

'Thorazine' first attracted attention when laboratory studies demonstrated that it exerted unique effects on both the central and autonomic nervous systems, the cardiovascular system and the skeletal-muscular system. It seemed clear that with a compound that possessed such a diversity of pharmacological effects, the scope of its possible clinical applications would be extremely wide.

'Thorazine' was then investigated in man and was found to possess the ability to control nausea and vomiting, to relieve certain neurotic conditions and psychiatric states, and to induce an unusual type of sedation. Furthermore, experimental work has shown that the drug can alleviate certain cases of pruritus, lower body temperature, and can potentiate the effect of analgesics, anesthetics, sedatives, and muscle relaxants.

Since the possible clinical uses of 'Thorazine' are so numerous, work is being directed towards confirming, one by one, the drug's outstanding indications. And one of the first uses to be confirmed is the **dramatic control of nausea and vomiting.**

# 'THORAZINE'

chlorpromazine hydrochloride, S.K.F.

Presently available at your pharmacy and hospital,  
**for control of nausea and vomiting<sup>†</sup>:**

10 mg. and 25 mg. tablets, and 50 mg. ampuls (2 cc.).

*Smith, Kline & French Laboratories, Philadelphia*

<sup>†</sup>Information on use of 'Thorazine' in neuropsychiatry available on request.

# Book Reviews

## **Textbook of Organic, Medicinal and Pharmaceutical Chemistry, 2nd edition**

Charles O. Wilson, Ph.D. and Ole Glasvold, Ph.D. J. B. Lippincott Co., Philadelphia, 1954. 774 pp. with index. \$19.

This book is an excellent text which covers concisely the essential formulas, chemical and physical properties and changes in structure of medicinal and diagnostic agents exhibited to the organism.

The authors' selection of drugs are all found in U.S.P. XIV, N.F. IX, N.N.R., A.D.R. and more recent literature. Although designed for pharmacy students, this material as presented would form excellent premedical training following the basic course in organic chemistry. It does not pretend to cover adequately the pharmacodynamic properties, but frequently makes use of such organization for classification of drugs. Therefore, it would appear necessary to append a section on the definition of biomedical terms to aid the less initiated.

Jan Nyboer, Dartmouth

## **Manual of Clinical Mycology, 2nd edition**

Norman F. Conant, Ph.D.; David Tillerson Smith, M.D.; Roger Denio Baker, M.D.; Jasper Lamar Callaway, M.D. and Donald Stover Martin, M.D. W. B. Saunders Company, Philadelphia and London, 1954. 432 pp. with index.

For anyone interested in the clinical and laboratory aspects of medical mycology, this book, which was first published in 1944, has become an indispensable *vade mecum*. This work presented lucidly and authoritatively the pertinent knowledge in this field, cleared the air of confusing and duplicating terminology and succeeded in making intelligible the previously bewildering field of the cutaneous mycoses. The appearance of the second edition (1954) some 100 pages longer than its predecessor, is particularly welcome in the light of significant advances in mycology during the past decade. This progress is given excellent coverage in the second edition. Thus, the recognition of widespread benign histoplasmosis, the changing perspectives on the epidemiology of cryptococcosis, the major outbreak of sporotrichosis in Africa, the progress in

therapy of systemic and cutaneous mycoses including the introduction of stilbamidine and hydroxystilbamidine in North American blastomycosis, the emergence of *trychophyton tonsurans* as a significant infection in the United States, etc., are all incorporated in the current edition. The bibliographies are selective, but have been well brought up to date. The illustrations are excellent and abundant; however, while recognizing that the costs might make it prohibitive without special subsidy, it would add immeasurably to the value of the illustrations of the dermatophytes and the common contaminants if the reproductions were in color. The general physician, dermatologist, student and laboratory worker will doubtlessly find this volume an indispensable guide to a field long neglected but increasingly established as of prime importance in medicine.

Morris Tager, Emory

## **Experimental Surgery, 3rd edition**

J. Markowitz, J. Archibald and H. G. Downie. The Williams & Wilkins Company, Baltimore, 1954. 838 pp. with index.

This interesting volume, designed primarily for the teaching of dog surgery and physiological investigations, carries the reader into the fields of experimental surgery, from the first simple exercise of dog surgery well into the fields of experimental physiology.

To the novice in surgery and to the student about to engage in experimental dog surgery, it opens a field to become proficient in the technique of surgery and at the same time gain a firm foundation in physiology.

To the abdominal surgeon who has had little opportunity to do dog surgery or to keep abreast of the facts of modern physiology, the chapters on surgery of the alimentary canal, production of chronic peptic ulcer, gastric fistulae, of studies in the physiology of intestinal obstruction, motility of the isolated colon, experimental surgery of the pancreas, biliary fistulae, to name a few, are illuminating indeed.

So also the chapters on experimental



transplantation of organs; the studies in the physiology and experimental surgery of the lung, trachea, bronchi and the heart; the experimental surgery and physiology of the joints and bone, must interest those engaged in these fields.

Vascular surgery including transplants and experimental hematology, factors governing restoration of plasma protein, experimental surgery and physiology of the kidney and liver, surgery of the involuntary nervous system, sympathectomy, mechanical heart and physiology of cardiac arrest are all covered.

The text is easily readable and entertainingly written. In the words of the author, "This book aspires: we believe that the jack-of-all-trades in our profession, the general surgeon, will find it useful. So will that drawer of water, the urologist, and that hewer of wood, the orthopedist. So indeed will all workers in experimental biology; all, that is, except those incredible soothsayers of today, the Freudian psychoanalysts."

E. A. Christofferson,  
*Chicago Medical*

#### **Bacteriology for Medical Students and Practitioners, 4th edition**

A. D. Gardner, Oxford Medical Publications, London, 1953. 278 pp. \$3.

As indicated in the preface to the first edition, the aim of the author of this book is "to present shortly, readably and relevantly, as much of the vast subject of bacteriology as a medical student and practitioner needs to know." The aim to present shortly has certainly been fulfilled. This book contains approximately 75,000 words, as compared with the 400,000 to 500,000 of the shorter popular American texts. There are 27 tables and 31 line drawings, but no half-tones or other photographic illustrations.

The book is certainly readable and relevant. It is clearly written and with an economy of words which I sometimes wish American textbook authors could achieve. The presentations of some rather difficult topics are remarkably clear and concise.

It is probably correct to say that the student who masters the contents of this text will be able to pass creditably most of the examinations he will be required to take, and will be able to continue his clinical work without exposing undue ignorance of most fields of infectious disease.

Protozoology (11 pages) and mycology (3 pages) are, however, very inade-

quately covered, and the discussions of virology and hypersensitivity are also, in my opinion, quite inadequate. Only bacteriophage and the viruses of variola, vaccinia, poliomyelitis, rabies, influenza, yellow fever and measles are discussed. Other viruses are mentioned only by name in a brief classification.

In considering a book as radically different from our conventional texts as this, the important questions are not those concerned with the adequacy of particular sections or with misstatements of fact. They are concerned with the meaning of the "needs to know" in the latter part of the author's statement of aims. Of necessity in a book of this nature, the methods of development of the knowledge presented and the nature of the evidence supporting it are minimized or omitted. No references for further reading are given. It seems to me that the clear presentation of microbiological knowledge, as it is at present, while essential is not the most important function of the teacher. The student should be prepared to understand and progress with new developments throughout the years of his practice. It is doubtful whether a text of this character could contribute much to this function.

Richard Thompson, *Colorado*

#### **Methods in Medical Research, Volume 6**

J. M. Steele, editor in chief. Year Book Publishers, Inc., Chicago, 1954. 271 pp. with index. \$7.

The books of this series have a well deserved popularity among medical investigators; the announcement that Volume 6 is available will be for many "enough said." However, some of the subject matter treated in this volume will probably enjoy a more limited appeal than that in previous volumes.

There are four sections. The first, on human genetics, is essentially an abridged monograph which justifiably reveals the mathematical complexities and statistical requirements of the field; it will serve more to emphasize that much of our present thinking about genetic factors in pathogenesis is shoddy than to provide a package of readily grasped tools. The section on environmental medical research is spotty: the measurement of climatic variables is treated nonconceptually in the most superficial manner. The section on energy metabolism describes procedures but neglects the apparatuses and the general principles; the chapter on respiratory exchange, skin temperature

and sweating is well done and useful. In 93 pages of elementary discussion on statistics in medical research, not even a distribution curve appears; it is difficult to see how the shallow chapters on basic concepts can be of much use even to beginners.

However, the author makes interesting observations on supposed statistical conflicts between clinical and basic research, on clinical surveys and on undesirable effects of laboratory tradition. A two-page chapter on consultation with a statistician may prove to be the most useful part of the entire section. The content and usefulness of the section on design and construction of metabolism cages is indicated by the title. Twenty-six informative pages on the rat integrate a scattered literature. Special attention is devoted to cages for radioisotope studies. Brief descriptions are given for metabolism cages for the mouse, dog and monkey.

Stewart C. Harvey, Utah

**Annual Review of Physiology, Volume 16**  
Victor E. Hall, Frederick A. Fuhrman and Arthur C. Giese. Annual Reviews, Inc. and the American Physiological Society, Stanford, California, 1954. 559 pp. with index. \$7.

The "Annual Review of Physiology" is sufficiently well established to require little general description. In brief, it serves the function of an extensive annotated bibliography on recent physiological and related research. It is an excellent reference guide for research workers and teachers in the biological sciences.

The book contains an astounding total of 4,792 references. The publication this year manifests unusual thought regarding content and organization. It may be a truism to point out that physiology has become so specialized that it is difficult, if not impossible to keep up with the major developments in each area without this review.

Many readers will find the prefatory chapter by Otto Loewi of great interest (10 references). Dr. Loewi discusses the stimulating value of certain early scientific papers in physiology resulting from the personal touch given these papers by their authors. He does not believe that the factual treatment given most present day research does much to inspire and educate students. The good researcher does not compile facts, but seeks to uncover facts of "strategic" or integrative value. The reviewer concurs in Dr. Loewi's belief that the revelation of the thought processes underlying re-

search is of great educational importance.

The following list gives the topics covered this year, the authors and the number of references:

- (1) Physical Properties of Protoplasm—Holger Hyden—300.
- (2) Growth—Lester W. Sontag and Stanley M. Garn—105.
- (3) Radiation Effects on Mammalian Systems—Harvey M. Patt—307.
- (4) Physiological Aspects of Genetics—N. H. Horowitz and Ray D. Owen—206.
- (5) Comparative Physiology of the Nervous System—C. Ladd Prosser—257.
- (6) Energy Metabolism—Eugene F. DuBois—96.
- (7) Respiration—Julius H. Comroe Jr.—228.
- (8) The Digestive System—R. A. Gregory—118.
- (9) Blood Clotting and Hemostasis—Louis B. Jaques—466.
- (10) Peripheral Circulation—Henry Barcroft—341.
- (11) Heart—Pierre Soulie—314.
- (12) The Kidney—Robert W. Berliner—334.
- (13) Excitation and Conduction in Peripheral Nerves—Alexander von Muralt—172.
- (14) Somatic Functions of the Central Nervous System—John M. Brookhart—273.
- (15) Visceral Functions of the Nervous System—U. S. von Euler—209.
- (16) Higher Functions of the Nervous System—Robert B. Malmo—160.
- (17) Hearing—Harlow W. Ades—59.
- (18) Pituitary - Adrenal System—Gregory Pincus and Fred Elmadjian—240.
- (19) The Parathyroids—Frederic C. Bartter—117.
- (20) Reproduction—James H. Leatham—349.
- (21) The Physiological Disturbance Produced by Endotoxins—Lewis L. Thomas—122.

R. A. D.

## Books and Pamphlets Received

(As space permits, those with the greatest interest to our readers will be reviewed)

### After High School What?

Ralph F. Berdfe. University of Minnesota Press, 1954. 231 pp. with index. \$4.25.

Journal of MEDICAL EDUCATION

**Biochemistry of Clinical Medicine**

**William S. Hoffman, M.D., Ph.D.** The Year Book Publishers, Inc., Chicago, 1954. 649 pp. \$12.

**Index of Differential Diagnosis, 7th edition**

**Arthur H. Douthwaite, M.D., F.R.C.P.** The Williams and Wilkins Co., Baltimore, 1954. 899 pp. with index. \$20.

**Geriatrics Medicine**

**Edward J. Stieglitz, M.D., J. B. Lippincott Co., Philadelphia, 1954. 675 pp. with index. \$15.**

**General Cytology, 2nd edition**

**E. D. P. DeRobertis, M.D., W. W. Nowinski, Ph.D., and Francisco A. Saez, Ph.D.** W. B. Saunders Company, Philadelphia, 1954. 456 pp. with index \$7.75.

**Annual Review of Medicine, Vol. 5**

**Windsor C. Cutting, editor. Henry W. Newman, associate editor.** Annual Reviews, Inc., Stanford, California, 1954. 414 pp. with index. \$7.

**Fundamentals of Otolaryngology, 2nd edition**

**Lawrence R. Boies, M.D.** W. B. Saunders Company, Philadelphia, 1954. 471 pp. with index.

**The Improvement of Patient Care**

**Marion J. Wright, R.N., M.S.** G. P. Putnam's Sons, New York, 1954. 156 pp. with appendices.

**Transactions of the American Ophthalmological Society**

Columbia University Press, New York, 1954. 756 pp. with appendices. \$18.

**Wine as Food and Medicine**

**Salvatore P. Lucia.** The Blakiston Company, New York, 1954. 119 pp. \$3.

**Textbook of Biochemistry, 6th edition**

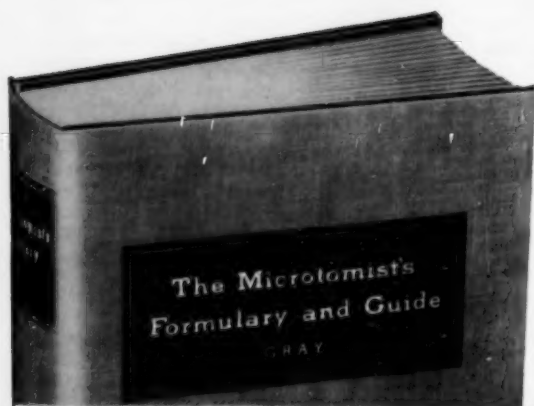
**Benjamin Harrow, Ph.D. and Abraham Maxam, Ph.D.** W. B. Saunders Company, Philadelphia, 1954. 563 pp. with index. \$6.50.

**Histology**

**Roy O. Greep, Ph.D., with 13 contributors.** The Blakiston Company, Inc., New York, 1954. 918 pp. with index. \$15.

**A Manual of Tropical Medicine, 2nd edition**

**Thomas T. Mackie, M.D., George W. Hunter III, Ph.D. and C. Brooke Worth, M.D.** W. B. Saunders Company, Philadelphia, 1954. 907 pp. with index. \$12.



**Just  
Published!**

**For Medical Students,  
Medical Technicians,  
Biology Majors**

## **The MICROTOMIST'S Formulary and Guide**

By **PETER GRAY, Ph.D.**, Professor and Head, Department of Biological Sciences, University of Pittsburgh. *An entirely new and comprehensive coverage of the field of microtechnique, compiled over a period of twenty years. This unique "encyclopedia" is divided into two parts and can serve equally well as a text or reference. Part I expands the scope of the author's successful HANDBOOK in that it is an enlarged and more detailed general guide to the preparation of microscopic slides. The text matter is supported by the helpful how-to-do-it illustrations. Part II is a reference text representing formulas of virtually all solutions used in the preparation of microscopic slides during the past fifty years. In this section the author introduces two new approaches: 1, separating the method and formulas from his descriptions and 2, giving the source of reference beside each formula. 794 pages; Well Illustrated . . . . .* **\$10.50**

## **New! LILLIE'S Histopathologic Technic and Practical Histochemistry**

By **R. D. LILLIE, M.D.** This NEW work is a concise and remarkably helpful guide to laboratory procedure. Methods are made so clear in this text that even the beginner can follow them without the aid of a more experienced person. Data is given on all the essential controllable factors—optimal times, temperatures, pH levels, reagent concentrations, etc. Written in a lucid, straightforward manner, this book places emphasis on the practical and factual rather than on the purely theoretical. For pathologists, anatomists, cytologists, histologists, and technicians. 475 Pages . . . . . **\$7.50**

**—Order Here—**

**THE BLAKISTON COMPANY, INC., Garden City, New York**

Please send me

\_\_\_\_\_ copies of THE MICROTOMIST'S FORMULARY AND GUIDE, Gray . . . . . **\$10.50**

\_\_\_\_\_ copies of HISTOPATHOLOGIC TECHNIC, Lillie . . . . . **\$ 7.50**

☐ For go-Day Teacher Examination\* ☐ For Personal Use on 10-Day Trial Basis ☐ Charge ☐ Check Enc. ☐ M. O. Enc.

NAME \_\_\_\_\_

ADDRESS (School if teaching) \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

\*Examination privileges available ONLY within Continental U.S.A. JME-54

**BLAKISTON**  
the  
MEDICAL  
AND SCIENCE  
PUBLISHERS

# Abstracts and Excerpts

Weeks, James R. **The Objectives of Undergraduate Pharmacology and How to Achieve Them**, "American Journal of Pharmaceutical Education," Vol. 18, No. 1, January 1954. (Delivered before the Section of Teachers of Biological Sciences, at the 1953 meeting at Salt Lake City.)

Before we can discuss what are to be the objectives of undergraduate pharmacology in a pharmacy school, we must first decide what is to be the overall objective of the pharmaceutical curriculum. Essentially, it is to train students for the profession of pharmacy, the great majority of them for retail pharmacy. It seems self-evident that if pharmacists are to be recognized as professional men, they must then render a professional service.

We feel that the pharmacist, broadly speaking, is to be an *expert on drugs*; a source of reliable information on the action, uses and applications of drugs, not only to physicians but also to veterinarians, farmers and the general public. I am personally convinced that there is a great need for such a service—new drug products are appearing on the market at a fantastic rate, and it is asking too much for a practicing physician to try to keep abreast of the field by critical study.

The pharmacist is the only person readily available to physicians and the general public who could answer such questions. It is the responsibility of the college to design curriculums to train men capable of rendering such professional services.

For convenience of presentation and subsequent discussion, I have considered the objectives of undergraduate pharmacology under five separate headings: (1) didactic pharmacology, (2) therapeutics, (3) laboratory pharmacology, (4) medical terminology and (5) posology.

**Didactic pharmacology:** For each class of similar drugs, a knowledge of their effects, an understanding of how these effects are put to practical use and a respect for their dangers and limitations.

**Therapeutics:** An appreciation of the problems confronting the physicians in the management of patients and clinical conditions, especially those phases of

treatment not involving the use of drugs.

**Laboratory pharmacology:** An introduction to the design, interpretation and evaluation of experiments illustrating drug actions.

**Medical terminology:** Ability to use the doctor's language.

**Posology:** Ability to recognize excessive dosages of potent drugs.

Clark, Edward Murray. **How Motivate Student Use of the Library?**, "American Association of University Professors Bulletin," Vol. 39, No. 3, Autumn 1953.

First, I think we must recognize that the printed word, even when it is heaped up in those sacred repositories called libraries, is neither divine revelation nor satisfactory fetish for the human mind. We of faculty maturity have no doubt learned that books are only "lengthened shadows of men"—and of fallible and frequently mistaken men like ourselves at that. But often our students have not attained such maturity. For them, "the books says so" is frequently equivalent to "this is so." It is up to us then, to keep showing our student that as he uses our libraries he must keep his mind in suspension, his conclusions hypothetical—to teach him to test, weigh and balance, to evaluate all that he may find there.

A second principle to be understood is that library statistics are never an end in themselves. At their best, they are merely symptomatic of academic disease or health, something like the physician's basic metabolism test in which the statistical norm of satisfactory conditions is of such wide range that the test is often of very little help in diagnosis. It is easy enough to force the student to the library, to force him even to check out great numbers of books. But that is not of itself evidence that his mind is growing or that his education is proceeding as it should.

A third principle is that the library should not be allowed to become a reservoir for plagiarism. Its meat should be for digestion, assimilation and nourishment, not merely for a diarrhea of print and syntax.

A curious student will benefit from using the library. How to arouse curiosity

is the question. There are things which will kill curiosity, such as busy work or made work, which should be anathema to any self-respecting teacher or student.

My own method has been to ask students at the first of the semester to hand in five subjects about which they are already so curious that they will not object to spending a good deal of time to learn more about them. Wherever possible, the student is assigned to his first choice.

The reference section of the library is explored, but always with the understanding that it is only a quick avenue toward primary materials rather than a final and exhaustive source.

I have been treating the library as if it were only a place for the intense application of a serious curiosity. Browsing and thumbing books is important; the knowledge that certain books exist for future reading is stimulating. I also believe it is the duty of every one of us to encourage his students to do considerable reading just for fun in fields outside their specialties.

Ralph P. Townsend. **A Pilot Program in Postgraduate Teaching of Psychiatry to General Practitioners.** "The American Journal of Psychiatry," Vol. 110, No. 9, March 1954.

This compend is intended for an audience made up of those who have a daily, almost hourly need for psychiatric understanding and facility. This audience is the general practitioner of medicine and the medical specialists in fields other than psychiatry.

Since 1936, the Tennessee State Medi-

cal Association has been presenting courses in various medical subjects to the practitioners of that state. The course in psychiatry, September 1949 to July 1951, was the first attempt to present this subject on a statewide basis.

The state was divided into nine districts called circuits; in each one five larger cities were selected as teaching centers. Registrations were solicited in advance, and the instructor held a series of 10 meetings in each center. Attendance varied from 6 to 132. The registration fee was \$10. A record of attendance for each registrant was kept and a certificate of completion was given to each doctor attending eight or more of the 10 lectures.

Lectures included the discussion of personality, employing psychoanalytic concepts and the development of the individual personality. The clinical discussions covered the reactive behavior disorders, the psychoneuroses, principles of psychosomatics and usually the problems of military psychiatry.

The didactic presentation was supplemented by a handbook of about 250 pages. The lectures were also supplemented by blackboard illustrations and particularly by sound films.

The program in each of the communities was publicized locally and the instructor was often called upon to give talks to lay groups. Emphasis was placed on presenting the material in as varied a form as possible, making use mainly of blackboard illustrations and sound films and relating the organized didactic presentation to these.



# The Personnel Exchange

## Faculty Vacancies

• The Creighton University School of Medicine requires the services of a full-time teacher in the area of PREVENTIVE MEDICINE and PUBLIC HEALTH. Requirements: M.D. and a M.P.H., or equivalent. Write details to Dr. F. G. Gillick, dean, Creighton University School of Medicine, Omaha, Neb.

• PHARMACOLOGIST: Combined department of physiology and pharmacology has opening for assistant or associate professor to take charge of teaching program in pharmacology. Time and facilities for research available. Requirements: M.D. or Ph.D. degree with at least 3 years of postgraduate academic experience. Direct inquiries to Dr. J. Raymond Johnson, director, department of physiology and pharmacology, Creighton University School of Medicine, Omaha, Neb.

• PEDIATRICIAN: Desired for half-time position as instructor for clinical clerkship program. Will assist in obtaining private practice opportunity for half-time not devoted to teaching. Address: V-17.

• OPHTHALMOLOGIST: Residency available in ophthalmology at Vanderbilt University School of Medicine. For details address Dr. Henry Carroll Smith, 630 Doctors Building, Nashville 3, Tenn.

• OBSTETRICS—GYNECOLOGY: Professor and chairman of combined department, now under part-time professor; university desires to establish full-time department. Well-trained academically oriented man of approximately 40 years of age desired. Address: V-18.

• INTERNIST: Board certified or qualified desiring full-time academic career with excellent advancement opportunity. Should be interested primarily in clinical teaching and administration. Write Dr. Harold N. Neu, director of dept. of medicine, Creighton University, Omaha, Neb.

• PHARMACOLOGIST: Teaching and research position for individual qualified for assistant professor rank, with doctorate degree and at least a few years experience. Some time free for personal research with complete freedom of investigation in newly remodeled and equipped laboratory. Position to be filled between July 1 and Sept. 1, 1954. Salary range \$6,000-7,000. Write to Dr. Frank C. Ferguson Jr., dept. of pharmacology, Union University, Albany Medical College, Albany 3, N. Y.

• FELLOWSHIP—CHILD PSYCHIATRY: Candidates must be M.D.'s with basic psychiatric or pediatric training. In addition to the clinical experience, the fellow in training will be encouraged to take certain academic courses which, if desired, can lead to acquisition of either a M.S. or Ph.D. degree. Write to Dr. Reynold A. Jensen, office of the medical director, University of Minnesota, University of Minnesota Hospitals, Minneapolis, Minn.


• CHILD PSYCHIATRIST: Joint appointment in department of pediatrics and psychiatry. Ample opportunities for research and teaching.

Rank and salary depend upon qualifications. Staff and service of department will be expanded considerably in near future. Write to Dr. Reynold A. Jensen, office of the medical director, University of Minnesota, University of Minnesota Hospitals, Minneapolis, Minn.

• RESEARCH DIRECTOR: To develop an active research program for the Saratoga Spa at Saratoga Springs, N. Y. Ph.D. with experience in physiology. Knowledge of biochemistry also useful. Permanent New York State Civil Service position (G-27 with salary of \$6,562-7,992). Possible appointment to teaching staff of Albany Medical College. Write: Dr. Frank W. Reynolds, Medical Director.

• PHARMACOLOGY: The University of Alberta invites applications for the position of associate professor of pharmacology, in the department of physiology and pharmacology, effective September 1, 1954, at a salary within the range of \$5,250-6,250 per annum (not including cost-of-living bonus now approximately \$300), depending on qualifications. Duties include lecture and laboratory courses for medical and dental students and a program of research work. Applications should include a recent photograph or snapshot, a curriculum vitae, and three references. Address: Dean of Medicine, University of Alberta, Edmonton, Alberta, Can.

• BACTERIOLOGY: Applications are invited for position, department of bacteriology, Hebrew University-Hadassah Medical School, Jerusalem, Israel. Duties to commence October 1, 1954. Position vacancy in grade instructor, assistant or associate professor depending on qualifications. For further information write Dr. Joseph Hirsch, Executive Secretary, Medical Advisory Board, 9 East 89th St., New York 28, N. Y.



OUR SEVEN  
**WOODWARD**  
*Medical Personnel Bureau*  
FORMERLY ANN'S  
3rd floor • 185 N. WABASH • CHICAGO 1  
• • • ANN WOODWARD, Director

*Founders of the counseling service to the medical profession, saving medicine with distinction over half a century.*

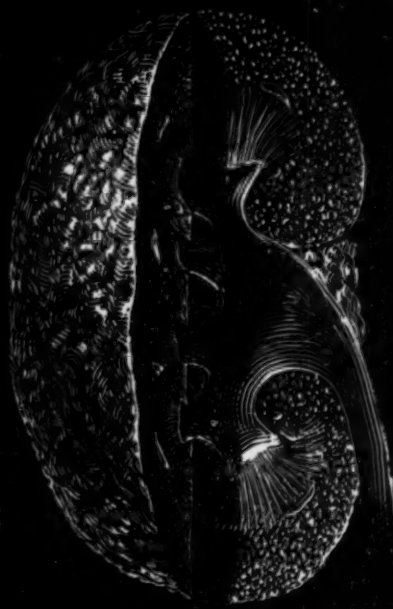
ACADEMIC OPPORTUNITIES IN MEDICINE, SURGERY AND THE SCIENCES. PLEASE SEND FOR OUR ANALYSIS FORM SO WE MAY PREPARE AN INDIVIDUAL SURVEY FOR YOU.

TO THOSE SEEKING DOCTORS OF MEDICINE AND SCIENTISTS FOR ACADEMIC POSTS PLEASE WRITE US FOR RECOMMENDATIONS OF WELL QUALIFIED MEN AND WOMEN.

**STRICTLY CONFIDENTIAL**



*Clinical results  
of treatment with  
the most effective  
single hypotensive  
available...*



## **Improvement in 55 to 62% of patients with hypertensive kidney disease<sup>1</sup>**

Together with significant reductions in elevated blood pressure in 80 per cent of hypertensives,<sup>1,2</sup> Methium therapy may produce an appreciable improvement in the associated renal symptoms when actual uremia is not present. Albuminuria and hematuria present in 48 of the 120 hexamethonium-treated patients followed by Moyer's group, improved definitely in 28 cases.<sup>1</sup> In addition, progressive renal failure did not continue so long as the blood pressure was controlled.

With continued management, up to or beyond a year, blood pressure may be reduced and stabilized, and cardinal symptoms arrested or reversed, without any increase in dosage.<sup>1</sup>

As blood pressure is reduced, and even without

reduction, hypertension symptoms have regressed. Retinopathy may disappear, headache, cardiac failure and kidney function may improve.

Methium, a potent autonomic ganglionic blocking agent, reduces blood pressure by interrupting nerve impulses responsible for vasoconstriction. Because of its potency, careful use is required. Pretreatment patient-evaluation should be thorough. Special care is needed in impaired renal function, coronary disease and existing or threatened cerebral vascular accidents.

1. Moyer, J. H.; Miller, S. I., and Ford, R. V.: J.A.M.A. 152:1121 (July 18) 1953.

2. Moyer, J. H.; Snyder, H. B.; Johnson, I.; Mills, L. C., and Miller, S. I.: Am. J. M. Sc. 225:379 (April) 1953.

# **Methium®**



CHLORIDE

(BRAND OF HEXAMETHONIUM CHLORIDE)

**WARNER-CHILCOTT Laboratories, NEW YORK**

To aid in solution of the problem of faculty vacancies, MEDICAL EDUCATION will list persons and positions available, as a free service. The school, department or person may have the option of being identified in these columns or of being assigned a key number for each position listed. Mail addressed to key numbers will be forwarded to the person or department listing the request.

Information for these columns should reach the Journal office, 185 N. Wabash Ave., Chicago 1, not later than the 10th of the month preceding publication.

## Personnel Available

• **BACTERIOLOGIST:** Ph.D. Man. Age 30, married, veteran. Teaching experience in medical school. Publications and references. Sigma Xi. Would like teaching-research position in medical bacteriology, virology, or immunology. Prefer location in west or southwest section of country but would consider other location. Available July, 1954. Address: A-96.

• **PHARMACOLOGIST-PHYSIOLOGIST:** Male, Ph.D. Broad teaching experience at both undergraduate and graduate levels; has organized course in medical pharmacology. Active in research, including clinical applications. Publications. Member of professional societies. Available on short notice. Address: A-97.

• **PHYSIOLOGIST:** M.D., M.A. chemistry, diplomate. 27 months of residencies. 5 years of practice. 3 years of research and teaching. Research papers in pulmonary physiology and biophysics. Desires teaching position with opportunity for research. Address: A-98.

• **SURGEON:** M.D., L.R.C.S. Foreign-born; naturalized. Experience includes 2 years post-graduate work in surgery and 6 years approved residency. Desires teaching-research position in medical school. Available July 1954. Address: A-99.

• **PHARMACOLOGIST:** Ph.D., associate professor in large medical school, fully qualified for departmental administration, desires change to responsible position. 14 years medical teaching, including organization and presentation of all phases of pharmacology courses. Active in research and in direction of graduate activities. Member of pertinent societies. Available Sept. 1954. Address: A-100.

• **BACTERIOLOGIST:** Ph.D., desires teaching and/or research position. Experience in teaching, research and consulting. Successful preparation of nurses, pharmacists and pre-medical students. At present, assistant professor. Available on short notice. Address: A-101.

• **INSTRUCTOR and/or RESEARCH ASSISTANT:** M.D. Japanese; American born, Age, 40. Reads, writes and speaks English fluently. Experience: 1 year residency in otorhinolaryngology; and 3 years residency in surgery at the Kyoto Prefectural Hosp. 3 years as medical lab technician at the U. S. Army Hosp. in Kyoto, Japan. 4 years as chief of E.E.N.T. department, Kushida Hosp., Osaka, Japan. Engaged in private practice since 1952. Address: A-102.

• **PHYSIOLOGIST:** M.D., associate professor, man, age 35, married. Swiss. Research for 7 years in respiration and circulation in Switzerland, U. S., England and Germany. 7 years teaching experience. Background in math, physics and chemistry. Prefers position in research or teaching for about 3 years. Publications and references. Available in autumn 1954. Address: A-103.

• **MICROBIOLOGIST:** Desires graduate research fellowship or assistantship permitting study toward Ph.D. degree. A.B., M.S. in bacteriology plus 2 years of graduate study toward Ph.D. completed. Research experience in therapy of parasitic infections and bacterial physiology. Numerous publications and member of Sigma Xi. Presently assistant professor of microbiology in small college. Available in July 1954. Address: A-104.

• **BIOCHEMIST-PHYSIOLOGIST:** Ph.D., age 27, 3 years teaching experience, research on cellular and blood thymo-nucleic acids, relationship to stress and tumor activity. Interested in working toward M.D. degree. Address: A-105.

• **ANATOMIST:** Ph.D., 33 years old. Has taught in recognized medical school. At present executive position in pharmaceutical industry. Wishes to return to academic profession. Has taught all fields of anatomy; interested in research. References; publications. Address: A-106.

• **PHARMACOLOGIST:** Male, age 33. Ph.D. Minors: biochemistry and physiology. 1 year graduate teaching and research assistant. Teaching and research position with medical, dental or pharmacy school pharmacology department desired. Available immediately. Address: A-107.

• **PHARMACOLOGIST:** M.D., Ph.D., married. 8 years teaching experience, active in research; publications. Desires position teaching with research or research only. Address: A-108.

• **INTERNIST:** Man. Age 42. M.D., Ph.D., F.A.C.P. More than 15 years experience in teaching, research and top-level administrative responsibility. Would like permanent position involving some teaching and/or clinical investigation. Address: A-109.

• **PATHOLOGIST:** M.D., 43, board certified in pathologic anatomy and clinical pathology. 17 years well-rounded experience in large hospital laboratory, medical school teaching and residency programs. Many scientific publications. Special interests include tropical medicine and hematology. Seeks position in foreign country, preferably in tropics. Address: A-121.

• **ANATOMIST:** Ph.D. in medical science, major in anatomy, 1954. Married. Age 31. Would like permanent teaching-research position at medical school or research institute. Extensive background in preclinical courses including pathology. 4 years teaching experience as fellow in histology and embryology in medical school. Keen interest in histochemistry and endocrinology. References. Available June 1, 1954. Address: A-110.

• **SURGEON:** 36, married, veteran. Diplomate of the American Board of Surgery. Training in general surgery with fellowship in tumor surgery. Background of research in biochemistry. Desires teaching position with opportunity for research; U. S. or foreign. Available July 1. Address: A-111.

• **ORTHOPEDIC SURGEON:** 36; certified; university trained; M.S. (orthopedic surgery) experience in traumatic surgery and rehabilitation of severely disabled. Seeks association with diplomate and university hospital affiliation. Address: A-112.

• **PHYSIOLOGIST—MICROBIOLOGIST:** Man, Ph.D., 30, veteran. 7 years experience in teaching physiology, microbiology and histology, medical school level. Member of scientific societies. Desires teaching fellowship with opportunity to work for M.D. in return for tuition and stipend. Prefer Canada or U. S. Goal—radiology. Available in fall. Address A-113.

• **PHARMACOLOGIST—PHYSIOLOGIST:** M.S., Zoology; Ph.D. expected June 1954. Experienced in pharmaceutical research, teaching experience in pharmacy during army service. Desires research and teaching position in physiology and pharmacology. Special interest in endocrinology. Member scientific societies, Sigma Xi. Publications; references. Address: A-114.

• **M.D., M.P.H.:** Diplomate of Board of Public Health and Preventive Medicine desires to head department of PUBLIC HEALTH and PREVENTIVE MEDICINE in medical school. 14 years varied experience in field combined with teaching at undergraduate and graduate levels. Capable of integrating this subject with rest of medical school curriculum. Address: A-115.

• **INTERNIST—CARDIOLOGIST:** M.D., 35, family. 7 years of university hospital training, including 4 years in cardiac laboratory. 30 publications. Certified in subspecialty. Now assistant professor of medicine. Seeking change of location. Prefers full-time permanent academic position. Address: A-116.

• **ANATOMIST:** 28, Ph.D. in anatomy. Desires teaching position at medical, dental or pharmacy school. Will consider teaching gross anatomy, histology, embryology or neuroanatomy. Chief interest is neuroanatomy. Continental U. S. school only. Available now. Address: A-122.

• **PHYSIOLOGIST—ENDOCRINOLOGIST:** Man, 31, Ph.D. 5 years experience in teaching and research at Harvard University. Seeking full-time academic position. Extensive experience in physiology, general endocrinology, endocrinology of reproduction, human heredity, research methodology, histology and zoological sciences. Will accept administrative duties and responsibilities. Salary secondary to good future. Address A-117.

• **HISTOLOGIST—HISTOCHEMIST:** Ph.D. Harvard; young man, teaching and research experience. Publications; member of scientific organizations. Interested in obtaining teaching or research position in eastern U. S. Address: A-118.

• **LABORATORY SUPERVISOR:** Administrative and/or teaching position in medical technology. 10 years supervisory experience. B.S. in bacteriology. Graduate credits in biochemistry, histology and pathology. Laboratory officer, Sanitary Corps, Medical Department, U. S. Army 4 years (captain). Publications; references. Seeks stimulating position, preferably with academic affiliation. Address: A-119.

• **SURGEON:** 32; American Board of Surgery certified. Married. Interested in academic career; category 4; prefer job with limited private practice privileges, but will consider any full-time position without private practice allowances. Address: A-120.

• **BACTERIOLOGIST:** Male, 30, M.Sc., married. 5 years teaching experience in medical bacteriology and general microbiology. 12 years practical and administrative experience in public health laboratories. Desires teaching position with research opportunities or administrative position in public health laboratory. Presently assistant professor of bacteriology. Available autumn 1954. Address: A-123.

• **BIOCHEMIST—RADIOCHEMIST:** Ph.D., 1952. Major in physical chemistry, minor in biochemistry. Experience in sterols, organic reaction mechanisms, small animal metabolism and radiocarbon dating. Presently engaged in research on mineral metabolism in man. Publications. Desires teaching or research position in applications of isotopes or physical chemistry to medical problems. Address: A-124.

• **INTERNIST:** M.D., practicing physician, consultant in medicine and endocrinology. Interested in university position developing research study to determine the potential of measuring taste as it adapts to and reflects immediate physiologic and nutritional needs. Hospital and medical school teaching experience. Certified Am. Bd. of Internal Medicine; Am. Coll. Physicians. Address: A-125.

• **BIOCHEMIST:** Biochemistry-Internal medicine Ph.D., M.D., 40. Interested in medical school appointment for teaching and research. Experience in teaching, research and private practice. Particularly interested in clinical correlation of basic sciences. Address: A-126.

• **PHYSIOLOGIST:** Ph.D., male, 37, family. Experience in research and teaching mammalian physiology. Research emphasis in neurophysiology and visual physiology. Experienced in using electrophysiological techniques. Acquainted with problems and techniques of electromyography, especially as applied to human studies. Publications. References. Desires opportunity for research with or without teaching responsibilities. Available. Address: A-127.

# ***Individual Membership***

**in the**

## **Association of American Medical Colleges**

For the first time in 1954, medical college teachers and administrators, and other persons interested in medical education have the opportunity to become Individual Members of the Association.

Individual Membership means receiving the *Journal of Medical Education* each month. It means participating in the discussions of the Annual Meeting and receiving the reports of the Teaching Institutes. It means receiving copies of the yearly *Directory*, the *Proceedings* of the Annual Meeting, the booklet on "Admission Requirements of American Medical Colleges," and other regular Association publications. And it makes available a valuable, though limited, information service and a personnel exchange service.

Individual Membership, at only \$10 a year, is open to any person who has demonstrated a serious interest in medical education over a period of years. All the privileges of membership begin immediately after payment of the \$10 fee, although confirmation must await official action at the next Annual Meeting.

To obtain membership, fill out the application form below, append check for \$10, and return to the Association's central office at 185 N. Wabash Ave., Chicago 1, Ill.

### **INDIVIDUAL MEMBERSHIP APPLICATION**

Association of American Medical Colleges  
185 N. Wabash Ave.  
Chicago 1, Ill.

Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

\_\_\_\_\_  
(City) (Zone) (State)

Field of medical education in which chief interest lies \_\_\_\_\_

College or other connection \_\_\_\_\_



**NEW...**

## **Veterinary Necropsy Procedures**

**Edited by**

**Thomas Carlyle Jones, Lt. Col., V.C., U.S.A., and**

**Chester A. Gleiser, Lt. Col., V.C., U.S.A.**

*Collaborators: Dr. E. A. Benbrook, Dr. Hilton A. Smith, Dr. Peter Olafson, Dr. Lee M. Roderick, Dr. David L. Coffin, Dr. E. L. Stubbs, Dr. Carl Olson, Jr., Dr. Leonard J. Goss, Col. Raymond Randall, V.C., Dr. Henry J. Griffiths, Dr. H. R. Seibold.*

Sponsored by the Armed Forces Institute of Pathology and, the American Veterinary Medical Association, this book describes various procedures for skillful dissection in post-mortem examination.

Covers necropsy procedures for many kinds of animals: Large, small, domestic, wild, and laboratory, as well as necropsy procedures for birds. Much information of a related nature is included.

**\$7.50. Ready June**

---

**Second Edition**

**Published 1953**

## **ANTIBIOTICS**

**by**

**Robertson Pratt, Ph.D.**

*Associate Professor of Pharmacognosy and Plant Physiology,  
Consultant on Antibiotic Research,*

**and**

**Jean Dufrenoy, D.Sci.**

*Research Associate in Antibiotics,  
both of University of California College of Pharmacy.*

More than ever a truly important treatise on basic elements and their direct relation to results in the production, handling, prescribing and administering of antibiotic and chemotherapeutic agents.

An enjoyable and profitable experience awaits the reader of this interesting and enlightening volume.

**389 Pages**

**89 Illustrations**

**\$7.50**

---

## **Medical Licensure Examinations (Rypins)**

**Prepared under the editorial direction of**

**Walter L. Bierring, M.D., F.A.C.P., M.R.C.P. Edin. (Hon.)**

Presenting a compact and orderly review of thirteen major medical subjects together with actual questions based on essential facts contained in the text. Serves as logical refresher study in preparation for all types of tests, whether oral or written, essay or objective!

**856 Pages**

**\$8.00**

**Available at all regular medical bookstores**

*(All prices subject to change without notice)*



**J. B. LIPPINCOTT COMPANY**

**Philadelphia**

**London**

**Montreal**